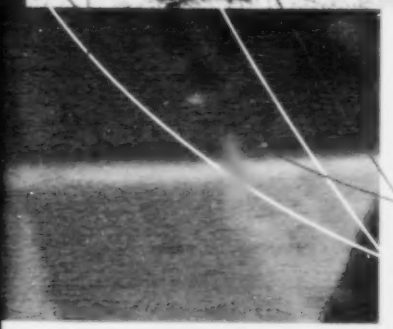
Following the Evidence

PREVENTING HARMS FROM SUBSTANCE USE IN BC



March 2006

Prepared by the Centre for Addictions Research of BC
for the British Columbia Ministry of Health

This guide is also available in PDF format on the British Columbia Ministry of Health website:
www.health.gov.bc.ca/prevent/pdf/followingtheevidence.pdf

Library and Archives Canada Cataloguing in Publication Data
Centre for Addictions Research of BC
Following the evidence : preventing harms from substance use in BC

"Prepared by the Centre for Addictions Research of BC for the British Columbia Ministry of Health"--p. verso.
Available also on the Internet.
Includes bibliographical references: p.
ISBN 0-7726-5634-7

1. Drug abuse – Government policy - British Columbia. 2. Drug abuse - British Columbia - Prevention. 3. Substance abuse – Government policy - British Columbia. 4. Harm reduction – British Columbia. 5. Public health administration – British Columbia. I. British Columbia. Ministry of Health.

HV5840.C32B74 2006 362.29'1709711 C2006-960188-7

2007-02229/

Executive Summary

Prevention of harms from psychoactive substances requires sustained effort by individuals, families, communities, governments and many other groups and organizations. This paper uses the best available evidence in population health and prevention to identify key strategic directions for action by ministries, health authorities, local governments, and agencies involved in the development of healthy public policy in British Columbia.

This prevention paper identifies five strategic directions that international evidence suggests will have the most impact on preventing harms from substance use. The first is influencing developmental pathways, which acknowledges that different life stages present differing risks and protective factors for harms. The second is delaying and preventing alcohol, tobacco and cannabis use during adolescence, when problematic patterns of use for these substances can lead to significant harms later in life. The third is reducing risky patterns of substance use, emphasizing interventions that can impact those types of substance use that have the greatest likelihood of causing harm. The fourth is creating safer contexts, which acknowledges that the setting or environment where substance use occurs can affect the risk of harms. And the fifth is influencing economic availability, whereby pricing mechanisms can be used to influence the use of substances such as alcohol and tobacco.

Effective interventions to prevent harms related to substance extend beyond the responsibility of the Ministry of Health, its health authorities and the health care delivery system. The Ministry of Health will use this paper to inform efforts in creating partnerships with government, non-government and private sectors and those involved in community-based activity both locally and provincially, with the goal of protecting and improving the health of British Columbians by minimizing the harm to individuals, families, and communities from psychoactive substance use.

Following the Evidence

PREVENTING HARMS FROM SUBSTANCE USE IN BC

Executive Summary 1

Introduction 4
Why Have a Prevention Approach? 4
Who Benefits from a Prevention Approach? 5
Who Is the Paper for? 6

Policy Context 8
National Context 8
Federal Context 8
Provincial Context 8
Regional Context 8

Fundamental Concepts 10
Substance Use: Harms and Benefits 10
Prevention 12
Harm Reduction 12
Population Health 13
Social Capital 14

Guiding Principles 16
Evidence of Effectiveness 16
Targeted Investment 17
Health and Human Rights 17
Universal and Targeted Interventions 18
Program Fidelity 20

BC Scope 21

Strategic Direction #1 – Influencing Developmental Pathways 23
Statement of Direction 23
Indicators 23
Key Considerations 24
Strategies 25

Strategic Direction #2 – Prevent, Delay and Reduce Use of Alcohol, Cannabis and Tobacco by Teens 28
Statement of Direction 28
Indicators 28
Key Considerations 28
Strategies 31

Strategic Direction #3 – Reduce Risky Patterns of Use 33
Statement of Direction 33
Indicators 33
Key Considerations 33
Strategies 35

Strategic Direction #4 – Creating Safer Contexts 38
Statement of Direction 38
Indicators 38
Key Considerations 38
Strategies 40

Strategic Direction #5 – Influencing Economic Availability 42
Statement of Direction 42
Indicators 42
Key Considerations 42
Strategies 44

Key Elements of System Capacity 46
Leadership 46
Partnerships and Collaboration 46
Workforce Development 47
Surveillance, Research and Evaluation 47
Knowledge Exchange 48

Conclusion 49

References 50

Introduction

This paper lays out conceptual foundations and strategic directions necessary to plan an integrated and comprehensive approach to preventing and reducing the harms from substance use. It provides an overview of the political context in which responses to problematic substance use are created. It addresses the nature of substance use and some of what can make it problematic, and articulates the foundational concepts such as prevention, harm reduction, population health and social capital.

The paper provides five evidence-based strategic directions for policymakers and service providers to achieve maximum and sustained benefit with limited resources.

The first strategic direction of early life interventions identifies key developmental stages at which children's health and wellbeing can be enhanced with long-term benefits for a variety of problem behaviours including substance use. The second strategic direction, delaying and preventing substance use by teenagers, focuses on the time of life at which these behaviours begin to occur and reflects evidence for which substances lead to most harms, whether immediately or in the longer term. The third strategic direction, reducing risky substance use, is directed at increasing awareness among health professionals and the community at large of particularly high-risk patterns of substance use and supporting strategies to reduce or avoid such use. The fourth strategic direction focuses on striving for safer settings of substance use, recognising that substance use will continue but that the risk of serious harms occurring can be reduced by modifying environments in which use occurs. The final strategic direction of reducing economic availability is singled out due to the unrivalled level of scientific evidence for the importance of ensuring that prices do not drop too low, a factor identified in review after review as being of vital importance for public health and safety (e.g. Loxley et al, 2004).

Each of the strategic directions includes recommendations for specific strategies supported by evidence. These can be expected, if implemented well, to significantly increase protection and reduce risk for British Columbians. Benefits will be achieved, however, by working on all five strategic directions simultaneously, rather than focusing efforts on just one or two of them.

WHY HAVE A PREVENTION APPROACH?

An effective approach to addressing the harms associated psychoactive substance use begins with prevention. It is important that a prevention agenda be shaped by a common understanding of the harms to be prevented and the factors that influence those harms. This paper seeks to establish a common understanding and provide some priorities based on the best available evidence on how to address and prevent the harms associated with substance use.

During the course of recorded history, human cultures have used a wide variety of substances to alter consciousness for non-medical purposes. These substances have been defined and controlled in various ways over time depending upon prevailing religious, cultural, social, political and intellectual structures and assumptions. The goal of prevention is not to eliminate psychoactive substance use completely.

In today's Western socio-cultural climate, which otherwise encourages consumption and maximization of pleasure, a "drug-free" society is particularly unrealistic. ***The goal of all prevention strategies set out in this paper is to protect and improve health by minimizing the harm to individuals, families, and communities from psychoactive substance use.*** Many of the strategies also focus more specifically on contributory goals such as:

- Increasing knowledge about psychoactive substances
- Delaying the onset of first use
- Reducing problematic patterns of use
- Reducing use to safer levels
- Supporting abstinence, especially for young adolescents
- Supporting environments that promote health

Prevention is understood broadly to include policies and practices that protect and promote healthy families, communities and individual development, prevent or delay the onset of substance use, or prevent or reduce the negative consequences associated with the use of psychoactive substances.

A public health approach to addressing substance use requires that this paper focus on factors that influence substance-related harm at both the individual and population level. Attention must be given to the relative impacts of various interventions, such as:

- universal interventions directed at the whole population;
- selective interventions aimed at groups or sub-populations with increased risk;
- indicated interventions targeted at individuals with early emerging problems; and
- developmental interventions focused on early pathways to substance use problems

The complex set of factors that influence substance related harm calls for caution and continual re-evaluation. Interventions intended to reduce harm at one level may in fact contribute to harm at another. Policies implemented, even with the best of intentions, may have unintended consequences. Some initiatives may serve one segment of the population at the expense of another. Social justice requires a respect for individual autonomy balanced against the need for social security. Successful prevention should help limit the harmful impacts of individuals' substance use behaviours on others around them and help create contexts in which individuals can (and do) make healthy choices for themselves.

WHO BENEFITS FROM A PREVENTION APPROACH?

A prevention approach benefits individuals, families and communities. It will help British Columbians consider how they can play a role in preventing or reducing harms from psychoactive substance use for themselves and others. This will benefit people across the life course by addressing substance use at different stages of life and at key transition points.

It will benefit both men and women by being conscious of the role of gender in substance use, the burden of associated harm and the experience of policy and program interventions. It will benefit vulnerable or disadvantaged groups, such as Aboriginal people, by drawing attention to the social context of human health and vulnerability with respect to problematic substance use.

WHO IS THE PAPER FOR?

The prevention paper is for the government, non-government and private sectors and those involved in community-based activity both locally and provincially. It speaks to the responsibilities of the health system and other public systems in British Columbia, including education, social services, police, courts, judiciary, victim services and corrections, including probation and parole. The paper will guide the development of prevention services and activities and help ensure consistency across inter-sectoral approaches to psychoactive substance use. Resources to draw upon go beyond financial ones, with social capital and developmental and community assets significantly impacting health outcomes and correlating with harms from substance use. It shows how different people and organizations can work together in whatever capacity they can to prevent harms associated with substance use and create a healthier British Columbia.

The paper acknowledges that a balanced approach that combines universal and targeted strategies is critical in preventing and reducing harms associated with substance use. The paper encourages the creation of environments that protect against those factors known to contribute to substance use problems. By focusing on these key factors in implementing the strategic directions a benefit is expected to flow to the entire population.

Ideally, prevention programs are based on a thorough understanding of all the factors that impact on the development of harms from substance use and the nature and amount of harm that result from each. In the real world, prevention programs may be fragmentary and not well informed by the evidence of research—for example, the Drug Abuse Resistance Education (DARE) Program, in which police officers engage in school-based prevention, remains popular despite evidence showing it is not effective (Lyman, et al., 1999). However, in recent years significant knowledge about effective prevention has been collected and is available to program planners.

This paper articulates core concepts, guiding principles, key strategic directions and actions for British Columbia that are based on the best available evidence. The paper is meant to complement, guide, and support the efforts being undertaken at the provincial level in communities and regions throughout British Columbia. It offers examples and suggestions for effective programs that are supported by current evidence. Each community will, no doubt, find ways to implement, adapt, and expand what is offered here.

The paper is meant to broaden the understanding of prevention, help provide access to what is known to be effective and draw attention to the variety of potentially successful prevention strategies. Communities are encouraged to implement multi-faceted approaches that draw from all of the broad strategic directions discussed.

Implementing a comprehensive, compassionate and effective prevention strategy requires:

- Understanding and responding to substance use through various lenses (e.g. women, aboriginal, youth, gay/lesbian/bisexual/transgendered) and across multiple systems (e.g. primary health, education, enforcement, corrections);
- Providing an effective regulatory regime;
- Addressing the social and structural determinants of health;
- Empowering and encouraging young people to delay the age at which they begin to experiment with substances;
- Providing people with credible, balanced information about substances so that they can make informed decisions about their use; and,
- Developing social capital to strengthen assets, promote resilience, and provide a sense of connectedness.
- Providing the public and policymakers with accurate information about indicators of substance use and harms.

Policy Context

This prevention paper has been developed in the context of other key policy initiatives from different levels of government that impact on the harms from substance use.

NATIONAL CONTEXT

The governments of Canada and the provinces and territories have begun work on developing a framework to coordinate different Canadian jurisdictions responding to substance use issues. Health Canada and the Canadian Centre on Substance Abuse co-facilitated a series of regional and thematic roundtables in 2004 and 2005 to bring together stakeholders from different systems and levels of government whose work is impacted by substance use and corollary harms. The process has resulted in a draft document, the *National Framework for Action to Reduce the Harms Associated with Alcohol and Other Drugs and Substances in Canada: Answering the Call* (Canadian Centre on Substance Abuse, 2005b)

FEDERAL CONTEXT

In May 2003, the federal government announced the renewal of the Canada Drug Strategy (CDS). The aim of the renewed CDS is to have Canadians living in a society increasingly free of the harms associated with substance use, including the use of controlled substances, alcohol and prescription drugs. The CDS addresses both the demand for and supply of substances. The implementation of the CDS focuses on leadership, knowledge generation and management, partnerships and interventions, and modernizing legislation and drug policy.

PROVINCIAL CONTEXT

In May 2004, the Ministry of Health Services released *Every Door is the Right Door: A British Columbia Planning Framework to Address Problematic Substance Use and Addiction.* The model outlined in *Every Door is the Right Door* acknowledges the primary role of community responses supported by a comprehensive system of primary care and highly specialized services. The service continuum ranges from health promotion through prevention and harm reduction to long-term rehabilitation and support. This prevention paper expands on the health promotion and prevention side of the continuum, to provide further direction to health authorities and their community partners for planning and delivering a range of health services relating to psychoactive substance use. The two documents are consistent and complementary, although the prevention paper goes into much greater detail and provides a broader evidence base.

REGIONAL CONTEXT

Local and regional partners form much of the service delivery infrastructure for preventing harms from substance use. Together, they have the most immediate role to play as either direct providers or funders of health promotion, prevention, harm reduction, treatment and support services.

The rich and complex web of inter-relationships that currently exists (and can be enhanced) among health, education, local government, social services, employment and enforcement partners at the regional and local level will form the foundation of an integrated and comprehensive response to preventing harms from substance use.

Municipal governments in British Columbia are often faced with providing services to people who are suffering harms from substance use, including housing, policing and other services. Some kinds of policy levers to modify substance use behaviours or contexts—such as zoning bylaws—are within the mandate of municipal governments. The BC Ministry of Health has provided some guidance to municipalities in understanding and supporting harm reduction responses to problematic substance use in *Harm Reduction: A British Columbia Community Guide* (BC Ministry of Health, 2005)

Best results in addressing social issues such as substance use are obtained when governments support the development of capacity within civil society and enable people and groups to be active participants in policy change. Community organizations have an important role to play in needs assessment, policy development, program design, service delivery and implementation. Partnerships and collaborative arrangements between systems, sectors and organizations will have a positive impact on the health of individuals, families and communities.

Fundamental Concepts

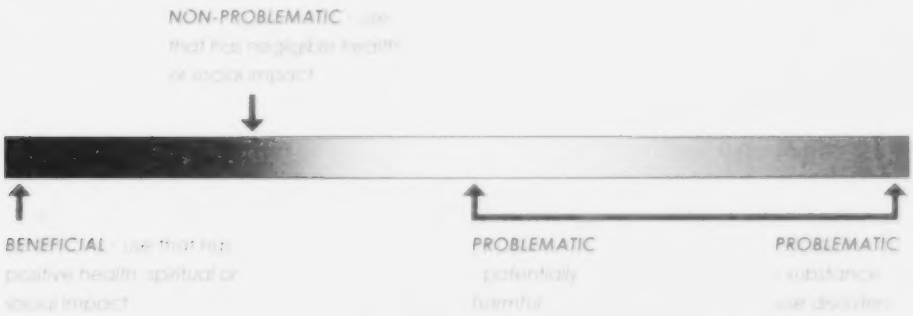
Several key concepts provide the foundation for this prevention paper. The following fundamental concepts serve to create common understanding of their significance for building a comprehensive prevention agenda.

SUBSTANCE USE: HARMS AND BENEFITS

Psychoactive substances are those substances that can be taken to alter mood or consciousness, that impact the brain and, subsequently, behaviour. The majority of British Columbians use one or more psychoactive substances. They include, among other substances: alcohol, tobacco, certain medications and illegal drugs, such as cannabis, heroin and cocaine. These substances are widely available everywhere in the world (UNODC, 2005), through either legal regulated markets for some substances or through illegal markets for those that are prohibited.

Substance use can occur along a spectrum from beneficial use through non-problematic to problematic and dependent use. Problematic substance use includes episodic use having negative health consequences and chronic use that can lead to substance use disorders (e.g. dependence) or other serious illnesses. Figure 1 illustrates the idea that as substance use becomes more intense (i.e. greater quantities per occasion with greater frequency) the likelihood of negative outcomes increases.

Figure 1: Spectrum of Psychoactive Substance Use



Substance use may begin at one point on the above spectrum and remain stable, or move gradually or rapidly to another point. For some people, their use of one substance may be beneficial or non-problematic, while their use of other substances may be problematic. Furthermore, the same pattern of substance use may have benefits in one area of a person's life and potential risks in another. In moderation, many psychoactive substances can be consumed and enjoyed without harm, and some provide important benefits (Health Officers Council of British Columbia, 2005; Shewan & Delgarno, 2005). Humans have used a variety of substances for millennia as sacraments, to stimulate thought, enhance awareness or creativity, for social purposes, and for simple pleasure. Some people choose to abstain from using any psychoactive substances while most people choose to use some and abstain from others. It is important to emphasize that abstinence is a healthy lifestyle choice.

When substance use is problematic, harms caused to individuals, families and communities demand attention. Some of the harms, for example lung cancer and liver disease, result from hazardous use over a number of years. Many other harms, such as injuries when intoxicated, overdoses and infections transmitted by sharing needles, can arise from a single episode of use.

Some substance use simultaneously provides both benefits and risks. For example, frequent light alcohol consumption may protect older people against heart disease but also elevates the risk of some cancers (Babor, et al., 2003). The risk of harms is determined by the nature and/or composition of the substance, its concentration, the amount used per occasion, the way it's administered and the setting in which use occurs. Intensity of substance use is not the only factor determining whether harms or benefits occur. Table 1 summarises main patterns of substance use that increase risks of harmful outcomes with examples from the major domains of health, social well-being and personal safety. Effective prevention needs to reduce these risky patterns of use and modes of administration if it is to impact on population levels of harm.

Table 1: A matrix of risky substance use patterns and examples of associated harms to early development, health, safety and well-being.

CATEGORY OF HARM	DRUG ADMINISTRATION	INTOXICATION. ACUTE EFFECTS	REGULAR USE. CHRONIC EFFECTS	DEPENDENCE
Developmental harm examples	Use in pregnancy (Fetal Alcohol Spectrum Disorder); environmental tobacco smoke and children	Family conflict; impaired parenting	Early and regular use by children; parental modelling	Child abuse and neglect
Physical health examples	Blood-borne pathogen transmission associated with injection drug use; Smoking increasing risk of respiratory disease	Acute medical conditions e.g., poisoning, overdose	Cancers; strokes; liver or heart disease	Withdrawal symptoms; seizures
Personal safety examples	Death from choking due to dislodged cigarettes	Intentional and unintentional injuries to self and others	Increased risk of injury due to use of tobacco due to liver disease	Risk taking to protect supply
Mental health examples	Increase risk of dependence from quick action methods (e.g. smoking, injecting)	Psychosis; reckless behaviour	Cognitive deficits	Mood disorders
Social wellbeing examples	Stigma associated with injection drug use; criminal record	Legal problems; unwanted pregnancy	Financial problems	Financial, work or relationship problems

ADAPTED FROM COCKERILL R.A., 2008

PREVENTION

Prevention is understood broadly to encompass measures that prevent and reduce harm by promoting healthy families and communities, protecting healthy development of children and youth, preventing or delaying the onset of substance use, or otherwise reducing harm associated with substance use. The reduction of substance-related harm at the population level is the major aim underlying the strategies outlined here, whether achieved through broad population health approaches or those targeted at risky patterns and settings of substance use.

A number of approaches to prevention inform this paper. For example, prevention programs can be designed to influence an entire population, including many people at low risk of harm, or a relatively small number of people who are at especially high risk. One useful classification system organizes interventions into universal, selective and indicated prevention, where universal interventions are directed at whole populations, selective interventions target groups at increased risk, and indicated interventions target those individuals with early emerging problems (Mrazek and Haggerty, 1994).

A major focus of prevention practice and theory has been to understand and influence risk and protective factors influencing children and adolescents. The developmental pathways approach acknowledges that there are common risk and protective factors for substance use and other problem behaviours and conditions, such as crime, mental illness, suicide, teen pregnancies and lower levels of school readiness. Risk factors are the social, environmental and individual factors that independently predict involvement in early and heavy substance use. Protective factors moderate and mediate the effects of risk factors, although they do not of themselves directly influence the likelihood of substance use. The risk and protection model of prevention addressing those factors that occur early in life has been extended recently to include also the more immediate factors that influence risk of harm from substance use (Loxley et al, 2004).

The community systems approach acknowledges that effective prevention involves multiple interventions implemented consistently at multiple levels of society from national regulatory and legislative strategies down to more local interventions delivered in settings such as schools, workplaces and streets. No single intervention, regardless of how effective for its specific target population, can sustain its impact without change at the system level. The community, as a dynamic, self-adaptive social and economic system, provides strategic levers to improve individual health and well being, establish appropriate standards for consumption, and set formal and informal controls on the harmful use of substances (Holder, Treno and Levy, 2005). Multiple evidence-based interventions are recommended in this paper across multiple settings, involving different sectors and agencies. Many interventions delivered consistently at different levels simultaneously can be expected to have significant impact on population levels of harm from substance use.

HARM REDUCTION

Harm reduction rests on the assumption that there is a broad spectrum of substance use in our culture, some of which is beneficial or non-problematic. Harm reduction seeks to lessen the harms associated with substance use without necessarily requiring a reduction in use.

It acknowledges the ethical imperative of helping keep people as safe and healthy as possible, while respecting autonomy and supporting informed decision-making in the context of active substance use (WHO, 2003).

Harm reduction strategies apply to problematic as well as recreational substance use, and they seek to reduce harm at both the individual and community level. For the purposes of this paper, harms are understood to include the harms to fetal, child, youth and family development; physical and mental health; personal safety and well being; public safety and order; and environmental health (see Table 1 above). These harms are the result of risky or unsafe patterns and contexts of substance use. This broader conceptualization of the cause and nature of harm enables the development of a wide range of interventions, such as approaches to reduce passive smoke inhalation and impaired driving, as well as strategies to reduce the spread of blood borne viruses associated with injection drug use.

Harm reduction provides an ethical basis to minimize the harms to self and others that are associated primarily with substance use, but also with other risk behaviours of individuals, organizations and systems. As a basis for public policy, harm reduction advocates that interventions should be based on science, public health, human rights and pragmatism. For example, harm reduction-oriented health policies can guide service planning towards the development of low threshold services to increase points of contact with those individuals most isolated from systems of care. The philosophy of harm reduction is not antagonistic to other types of interventions such as treatment and enforcement; indeed, it is a foundational concept that can usefully inform these types of practices (BC Ministry of Health, 2005).

Harm reduction strategies are an essential component of a broad prevention framework (Loxley et al., 2004). They contribute to reducing risk and increasing protection against harms from substance use both for individuals and populations.

POPULATION HEALTH

Population health analysis is the study of how individual characteristics and broader social and economic factors combine to influence the health of groups of people. It focuses on the health of the general population and the health of specific population sub-groups, such as Aboriginal people. The term "determinants of health" is a collective label given to the social, economic and environmental factors and conditions, over which individuals have limited direct control, and which are thought to have an influence on health. The determinants of health go beyond lifestyle practice to influence individual and collective behaviour. It is the complex interactions among all these factors that have the most profound impact on health. The determinants of health can be organized into four broad categories:

- living and working conditions – income, social status, social support, education, employment, working conditions and physical environments, such as housing
- individual capacities and skills – personal health practices, coping skills, healthy child and youth development, and biology and genetic endowment
- social environments – values, laws, norms, attitudes, gender and culture, as well as to specific contexts such as family, school, workplace and systems of care
- access to services – equitable access to services that maintain and promote health, prevent diseases, and restore health and function

Evidence emerging from the population health literature suggests particular emphasis should be placed on healthy child and youth development and gender. Healthy child and youth development addresses the effect of prenatal and early childhood experiences on subsequent health, well being, coping skills and competence. There is increasing evidence that intervening at critical stages or transitions in the development of children and youth has the greatest potential to positively influence their later health and well-being (Toumbourou and Catalano, 2005).

A focus on determinants of health has increased awareness of the need for policies and programs to be gender responsive and culturally relevant. Gender refers to the array of roles, personality traits, attitudes, behaviours, values, relative power and influence that society ascribes to people based on sex. The particular vulnerability of women and girls, males who have sex with other males, and trans-gendered persons must be addressed. In the health system, gendered norms play out in the form of longstanding preoccupation with women's maternal and reproductive functions and capacities. As well, the uniqueness of certain women's health issues impacted by the status or role of women in society and culture often receives relatively limited attention. This includes different patterns of tobacco, alcohol, prescription drug and illegal substance use. Likewise, policies and programs must be modified and adapted to suit the culture of the community in which they are to be introduced.

The relationship between determinants of health and harm is complex. The many aspects interact within a dynamic system. Economic factors, for example, can have two-way impacts on the extent of substance use and related harms. Income and economic well-being is positively correlated with per capita consumption of alcohol within a population (CCSA 2004) and, unfortunately, with the extent of alcohol-related deaths (Chikritzhs et al., 2003). Yet economic deprivation also correlates with several individual and social impacts of, for example, illegal drug use. Most of the young people who smoke cigarettes or engage in binge drinking (high risk behaviours) have only average levels of social and developmental risk factors (Stockwell et al., 2004). Thus prevention of harm from substance use requires more than a narrow focus on specific determinants. Effective prevention requires a comprehensive approach that involves universal strategies to engage all members of society in broad health promotion and prevention efforts promoting healthy decision-making as well as targeted strategies for those at greater risk due to social or economic disadvantage.

SOCIAL CAPITAL

Social capital refers to features of social interactions that facilitate cooperation for mutual benefit, such as networks, norms and social trust (WHO, 2004). It enables collective action and can promote social and economic growth and development by complementing other forms of capital, such as physical and human capital. Communities with high social capital will be those in which individuals are well-connected with each other in many cooperative and mutually beneficial ways for social, commercial, cultural and educational exchanges.

Research over the last two decades has suggested links between social capital and economic development, the effectiveness of human service systems and community development.

Impressive evidence has recently been marshaled to demonstrate that social capital can help mitigate the impact of social and economic disadvantage and promote better health (Putnam 2000). Social capital has been found to influence individual health, even after controlling for income, education and risk behaviours such as smoking (Loxley et al, 2004). The potential benefits of social capital are incredibly broad: preventing delinquency and crime, promoting successful youth development, improving educational outcomes, decreasing health disparities, and even increasing economic productivity (Cohen & Prusak 2001). However, there can be a significant downside.

Communities with high social capital have the means, and possibly the motive, to be exclusive or to resist changes that have important benefits (World Bank 1999). Nonetheless, social capital has increasingly been identified as a mechanism to explain relationships between social factors and health outcomes (Loxley et al., 2004). It is a powerful tool in understanding the complex relationships identified within community systems and population health approaches.

The concept of social capital is useful for the purposes of the prevention paper, as it emphasizes the importance of not focusing only on the substances being used, but on the communities of people who use them. Fostering healthy social networks and building community capacity are important activities to complement more specific strategies recommended in the document.

Guiding Principles

Several key principles provide the crucial foundation for the development of a balanced and pragmatic prevention effort. These principles must be applied in a careful and thoughtful manner. Together they articulate the ethical basis for decision making and provide the basis for implementing prevention efforts for maximum and sustained benefit.

EVIDENCE OF EFFECTIVENESS

The complexity of substance use, the public impact of related harms, advances in prevention and treatment knowledge, and escalating demand for services means that responses must be based on the best available evidence. This evidence consists of research and evaluation findings (including process, outcome and economic evaluations), needs assessments, specialist and community knowledge, as well as the lived experiences of substance users, their families, community leaders and service providers.

The body of prevention evidence has grown significantly over the past decade. However, challenges remain with regard to the strength of the evidence and its gender and cultural applicability. Prevention operates in an environment where numerous cultural, social, economic and political factors interact. Prevention science strives for evidence of what interventions work and how they work, but acknowledges that repeatability of results is relatively rare (WHO, 2004). Nonetheless, a significant number of policies and programs have been shown to yield positive results across different settings that recommend their wide implementation (Loxley et al, 2004; Stockwell et al., 2005a).

The nature of evidence needed depends on what is meant by effectiveness. For the purpose of this paper, effectiveness refers to the extent which the intended outcomes of intervention are achieved in accordance with stated values, and within limited resources available. To ensure efficient and effective use of resources, it is important for policymakers and service providers to understand what an integrated response to prevention will likely cost in terms of the resources it consumes and types of outcomes that can be expected. Much evidence still rests on effectiveness of programs without specifying the resources needed to bring this about (Loxley et al., 2004).

Other challenges also face communities seeking to apply the evidence. Research, practice and policy have usually been constructed to affect the entire population without specific attention to differential effects on women and men or various subgroups such as Aboriginal men or teen girls. As such, evidence is usually lacking on the impact of population level policies on many subpopulations, as well as for targeted approaches that address vulnerabilities specific to diverse groups of women and men.

The principle of prudence recognizes that all evidence has weaknesses and that we can rarely know enough to act with absolute certainty, but that we can be sure enough of the quality of the existing evidence to make recommendations for action (WHO, 2004).

The precautionary principle, borrowed from the field of environmental sustainability, states that where there are threats of serious or irreparable damage, lack of full scientific certainty shall not be used as a reason for postponing measures to prevent harm. The challenge for policymakers and service providers, therefore, is to actively seek and promote the use of the best available evidence and to support the accumulation of a more complete evidence base, while continuing to take decisive action to prevent and reduce harm.

TARGETED INVESTMENT

Policy makers administering limited resources must be concerned with return on investment. The choice of investment in prevention programs must be guided by which patterns of substance use contribute the greatest harm and where can the greatest impacts be made. These are not easy issues to resolve. Specific estimates of the distribution of the burden of disease for British Columbia are 12% for tobacco use, 10% for alcohol and 2% for illegal substances (BC Ministry of Health, 2001).

Examination of the patterns of substance use underlying associated harms (Loxley et al, 2004) indicates that, in priority order, prevention of substance use at the whole population level should target:

(i) long term, dependent use of tobacco products through smoking

(ii) episodic or 'binge' use of alcohol, especially in settings with an injury risk

(iii) long term heavy use of alcohol in excess of low risk drinking guidelines (e.g., World Health Organization, 2000)

(iv) injection of psychoactive substances, especially in unhygienic conditions and with unknown dosage

(v) early use of legal substances by adolescents (as delaying this type of use often delays subsequent illegal drug use)

Accordingly, the major strategic directions selected in this paper (see below) reflect these priorities.

HEALTH AND HUMAN RIGHTS

Prevention of harm from substance use is not solely the domain of ministries of health or the health system. It requires the involvement of a wide range of sectors, actors and stakeholders. A human rights framework, with its emphasis on the social, economic and cultural dimensions of human development and well-being, provides an intersectoral context for addressing the broad determinants of health and substance use.

It is increasingly understood that environmental and societal factors increase or perpetuate the vulnerability of certain individuals and groups more than others. Vulnerability, in turn, limits the extent to which people are capable of making informed decisions about their own health, safety and well being.

These factors—which include unemployment, poverty, single motherhood, geographic isolation, and aboriginal status, among others—play key roles in influencing individual risk and risk taking behaviour. Effective vulnerability reduction means going beyond the immediate risk taking act to address the underlying factors that create environments that support and encourage risk behaviour. A human rights perspective allows us to consider how marginalization, disadvantage and social exclusion affect substance use, the burden of harm from use and the experience of policy and program interventions.

Human rights include individual civil, political, economic, social and cultural rights. These rights empower individuals and communities by granting them entitlements that give rise to legal obligations on governments. Human rights, for example, can help to equalize the distribution and exercise of power within society, thereby mitigating the powerlessness of the poor. The principles of equality and freedom from discrimination demand that particular attention be paid to vulnerable groups. The right to participate in decision making processes can help to ensure that marginalized groups are able to influence health-related matters and strategies that affect them (WHO, 2004). Greater involvement of people who use drugs in planning policies, programs and services that affect them is an example of how this principle can work in the substance use field (Canadian HIV/AIDS Legal Network, 2005).

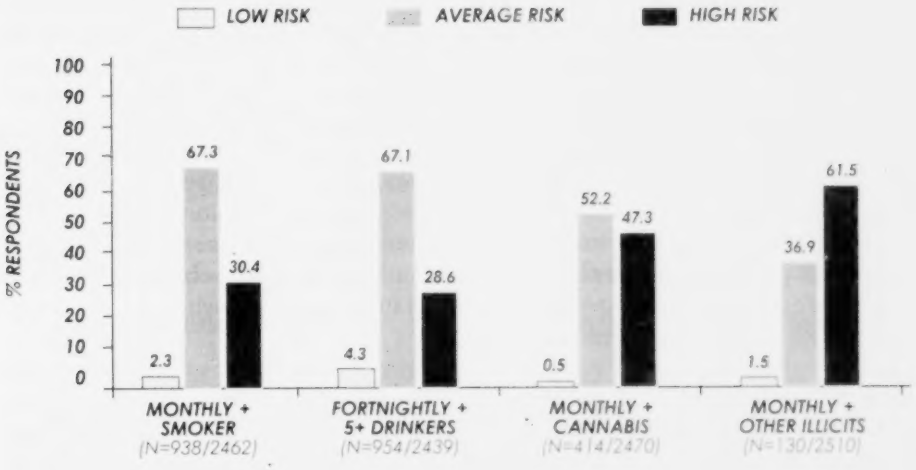
A human rights framework offers a useful tool for understanding and responding to public health issues, such as problematic substance use. For example, the violation of human rights can increase the risk of problematic substance use and, conversely, such use can negatively affect the extent to which human rights are upheld. By acknowledging the dynamic and mutually reinforcing relationship between health and human rights, concepts of vulnerability and risk, distribution of health outcomes, and effectiveness of policies can be better understood (Gruskin, Plafker and Smith-Estelle, 2001).

UNIVERSAL AND TARGETED INTERVENTIONS

Effective prevention requires recognition that the bulk of preventable illness is often contributed by low to average risk individuals due to their greater numbers than those at higher risk. This 'prevention paradox' means it may be more cost-effective in terms of population health outcomes to focus on the majority who are at low or average risk of harmful drug use, while sustaining efforts to engage the smaller proportion of high-risk users.

Recent evidence from Australia indicates that the prevention paradox holds true for youth who consume legal substances, such as alcohol and tobacco, but does not hold for illegal substances. Figure 2 illustrates how most of the teenagers in a large school survey who engaged in 'binge' drinking or tobacco use at least once a month were categorized as having either low or average adolescent risk factors for problem behaviours – and that the reverse was true in relation to the regular use of illegal substances other than cannabis (Stockwell et al, 2004). This suggests that some universal interventions (such as maintaining prices and controlling access to tobacco and alcohol by young people) are required to impact on legal drug use. More targeted interventions are more likely to be beneficial for reducing the harms from illegal drugs (Loxley et al, 2004).

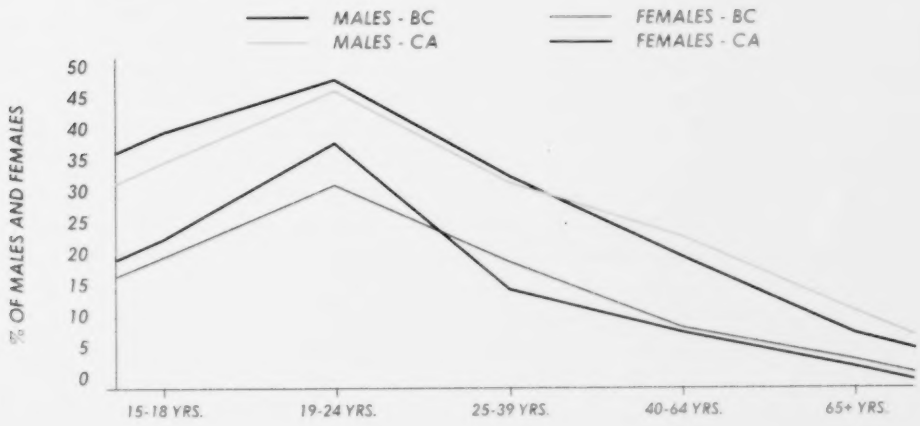
Figure 2: Broad risk status of students aged 15/16 years who use different substances at least once a month



FROM: STOCKWELL ET AL. 2004

For the general population, it has also been repeatedly shown that the majority of people whose average alcohol consumption is quite low nonetheless contribute most cases of alcohol-related injuries and acute problems (e.g. Gmel et al., 2001). The reason for this is that occasional heavy drinking is a very common pattern. In British Columbia, a substantial portion of alcohol consumption is above levels for acute risk (Centre for Addictions Research of BC, 2005). Figure 3 illustrates that young, particularly male drinkers are particularly at risk, but that other segments of the population need to be included in a comprehensive and effective prevention strategy (ibid).

Figure 3: Percentage of BC and Canadian residents drinking at levels for acute risk (>4/5 drinks in a day) at least once a month in the last year by age and gender.



The challenge for policymakers and service providers is to find the optimal balance between universal and targeted prevention strategies to achieve the desired outcome. This requires reflection on how to balance the impact on broad population health while redressing issues of vulnerability within high-risk populations. Both universal and targeted interventions have been identified later in this paper.

PROGRAM FIDELITY

The ultimate test of an evidence base is how it can be used effectively to inform policy and practice. There is some debate in the prevention literature about the relative merits of strict adherence to program fidelity versus allowing or even encouraging adaptation to different settings or populations. The challenge is to separate out superficial aspects of a program from the fundamental forces responsible for its effectiveness (Saltz, 2005).

Policymakers are concerned with the need to justify the allocation of resources and demonstrate added value. Service providers, in turn, are interested in the likely success of implementing interventions. Participants want to know that both the program and the process of implementation are participatory and relevant to their needs.

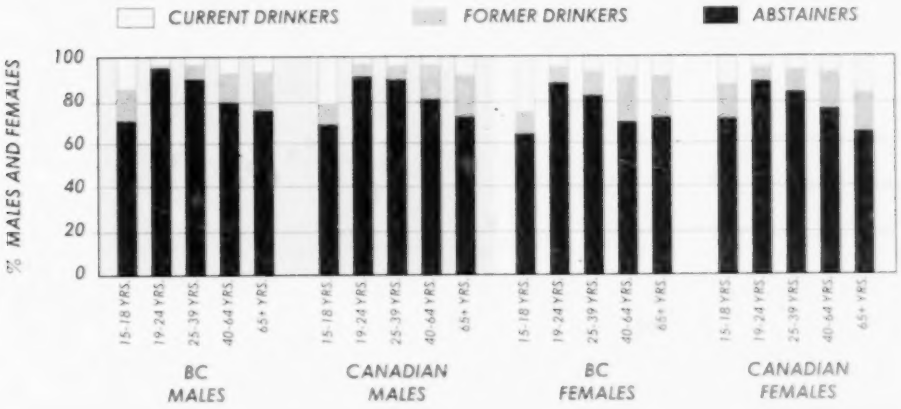
Our knowledge of the robustness of prevention findings across diverse contexts and settings is limited. Initiatives to disseminate effective or promising practices, and to stimulate their adoption and implementation elsewhere, should be combined with efforts to perform new outcome and process studies and to develop supportive research policy. In this way currently undocumented evidence on effective practice can make its way into the published literature.

Implementation research is critical to understanding how and under what conditions programs may succeed. This knowledge can then be translated into guidelines to support policymakers and service providers in adapting programs to local needs and resources, thereby increasing the likelihood that these interventions will be effective.

BC Scope

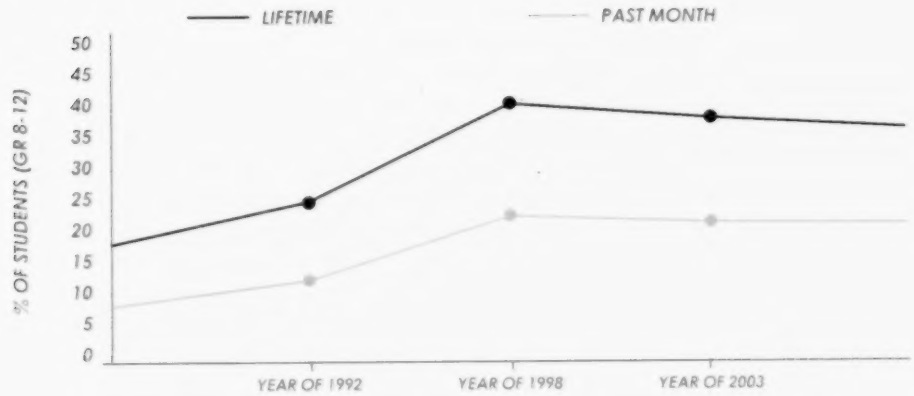
British Columbia's population is in many respects generally healthy; for example, BC has lower rates of tobacco use and higher rates of physical activity than other jurisdictions in Canada (BC Office of the Provincial Health Officer, 2003). However, the rates of many types of substance use in BC are similar to or higher than other Canadian provinces. Figure 4 shows the rates of alcohol use by men and women in British Columbia and Canada

Figure 4: Drinkers, former drinkers and abstainers in BC and Canada by age for men and women (Canadian Centre on Substance Abuse, 2004)



More British Columbians have used cannabis in their lifetimes and in the past year than have other Canadians (Canadian Centre on Substance Abuse, 2005a). Young people are particularly likely to have used cannabis, with more than one in five students reporting past month use in 2003 (The McCreary Centre Society, 2004). Figure 5 shows the trend of cannabis use over the past decade, where rates of both lifetime and past year use are significantly higher now than in 1993.

Figure 5: British Columbian student cannabis use, all grades.



DATA ADAPTED FROM MCCREARY ADOLESCENT HEALTH SURVEYS I, II & III, THE MCCREARY CENTRE SOCIETY, 1992, 1998, 2003

With respect to other illegal drugs than cannabis, prevalence of lifetime use is also higher in BC than elsewhere in the country (Canadian Centre on Substance Abuse, 2005a). Table 2 shows the rates of lifetime and past year use of different substances:

Table 2: Rates of lifetime and current use (past 12 months) of different substances by British Columbians aged 15 years or older in 2004

TYPE OF SUBSTANCE	% EVER USED IN LIFETIME	% USED IN PAST 12 MONTHS
Alcohol	93.2%	79.3%
Tobacco*	37.0%	15.0%
Cannabis	52.1%	16.8%
Cocaine/crack	16.3%	2.6%
Amphetamine/speed	7.3%	0.8%**
Ecstasy	6.5%	1.1%**
Hallucinogens	16.5%	0.7%**
Any illegal drug other than cannabis	23.0%	4.0%

*CANADIAN TOBACCO USE MONITORING SURVEY (2004). ALL OTHERS FROM CCSA (2004).
** ESTIMATES FOR WHOLE OF CANADA DUE TO SMALL SAMPLE SIZE.

The substance use patterns of British Columbians may range from beneficial to non-problematic. Approximately 9.1% of British Columbians aged 15 years or older report at least one type of harm (e.g. relationships, financial, legal, work-related) from their own alcohol use, while 35.4% report at least one type of harm (e.g. physical or psychological harms) from others' drinking (Canadian Centre on Substance Abuse, 2005a). With respect to illegal drug use (including cannabis), approximately 17.6% of British Columbians report one or more harms resulting from their own drug use in the past year. It must be noted that these data are self-reported from a telephone-based survey—they do not reflect problems for some vulnerable groups, such as homeless people, and they may not accurately reflect all of the harms experienced by the BC population.

However, it is clear that the harms British Columbians experience from the problematic use of psychoactive substances warrant a concerted approach from many levels of government, different sectors and organizations, and communities, families and individuals. A comprehensive, compassionate, and effective response is needed prevent and reduce the harm from substance use. It must address high risk patterns, modes of administration and settings of substance use. The following sections identify five strategic directions that evidence suggests will have the most impact in mitigating or reducing harms from substance use in British Columbia.

Strategic Direction #1 – Influencing Developmental Pathways

STATEMENT OF DIRECTION

Effective prevention programs influence developmental pathways across the lifespan by addressing social and structural determinants, reducing individual risk factors, and increasing protective factors. Particular attention to those transition points at which problems from substance use often emerge is important. Such key developmental stages include the pre-natal/post-natal period, the transition to school, adolescence and the transition to high school (primary focus of Strategic Direction #2), transition to independence (going to college or entering the work force), and transitions relating to family and occupation, including retirement.

INDICATORS OF PROGRESS

- Percentage of health authorities that have comprehensive FASD prevention plans in place
- Number of service providers providing services to pregnant women who receive training on counselling women about alcohol use during pregnancy
- Number of pregnant women who receive counselling about alcohol use during pregnancy.
- Rates of alcohol use and smoking among women of child-bearing age and, specifically, women who were pregnant in the 2004 and later Canadian Addiction Surveys.
- Scores on school experiences among Grade 4 students in Ministry of Education "School Satisfaction" survey
- Number of students (general population and aboriginal) completing secondary school according to the 6-Year Dogwood Completion Rate statistics
- Number of adults aged 25-29 years old who are engaged in either work or school, as measured by the Statistics Canada Labour Force Survey

KEY CONSIDERATIONS

Harms from substance use may occur at different stages in an individual's life, and may arise from a variety of contributing causes. Risk factors predict early and heavy substance use, and may be individual, environmental, or social. They include such things as genetic factors, parental substance use (pre- or post-natal), childhood trauma, inadequate income and/or housing, and early initiation to substance use. Protective factors mitigate the impact of risk factors for problematic substance use. These include easy temperament, social and emotional competence, healthy family attachment, school connectedness, participation in a faith community, and having a meaningful adult role-model relationship during adolescence or a supportive relationship in adulthood. It is important to note that Aboriginal communities still endure social and economic inequities relating to the legacies of the colonial experience, and that these have considerable impact on problematic substance use and other health behaviours (Office of the Provincial Health Officer, 2001).

Table 2: Risk and Protective Factors across the Lifespan

LIFE STAGE	EXAMPLES OF RISK FACTORS	PROTECTIVE FACTORS EXAMPLES
Pre-natal	• Maternal alcohol and tobacco use • Genetic influences	• Nutrition • Social supports
Early childhood (0 to 5)	• Extreme socio-economic disadvantage • Childhood trauma	• Easy temperament • Social and emotional competence
Middle childhood (6 to 11)	• Extreme socio-economic disadvantage • Early school failure • Favourable parental attitudes toward substance use • Childhood behaviour problems (including mental health issues)	• Social and emotional competence • Shy and cautious temperament • Parental harmony
Adolescence (12 to 18)	• Community influences (including access to positive social activities, levels of substance use in the community, availability of substances, and media portrayal of substance use) • Conflict with parents, or parental substance use problems • Low involvement with adults • Peers engaging in problematic substance use • School failure • Mental health problems	• Attachment to family, school and community • Involvement in faith community • Parental harmony and good child-parent communication
Early adulthood (19 to 29)	• Peers or partner who use substances • Patterns of behaviour in social, educational, or employment setting • Unemployment • Mental health problems	• Attachment to family, school and community • Faith community involvement • Parental harmony and good child-parent communication
Later adulthood (30 to 64)	• Mental health problems	• Effective regulation of alcohol in the community • Stable supportive relationships
Senior years (65 +)	• Loss of a partner • Social isolation • Reduced social support	• Stable supportive relationships

Some evidence indicates that risk factors are cumulative and occur across the lifespan. For example, maternal alcohol or tobacco use may impact cognitive development that influences early school adjustment that is linked to school behaviour problems that are associated with early illegal drug use that predicts heavy use in mid- to late-adolescence that predicts drug-related harms in early adulthood. At each point along the way, other risk or protective factors may influence the outcome. The developmental pathways to harm from substance use are different for girls and women than they are for boys and men, and special attention is required to address these differences. Addressing risk and protective factors and the broad social determinants of health requires multi-system, community-wide collaboration.

STRATEGIES

Strategy 1: *Develop and deploy a comprehensive strategy to decrease the use of alcohol and tobacco during pregnancy and the exposure of infants and young children to second hand smoke.*

The negative fetal health impacts related to the use of alcohol or tobacco during pregnancy are well-attested. (Roberts & Nanson 2001; United States Department of Health and Human Services 2001) Much more research is needed to identify effective actions to address this strategy, but the following have shown promise.

1. Develop FASD prevention strategies in each regional BC Health Authority.

2. Enhance the effectiveness and reach of community-based pregnancy support programs to assist expectant mothers, and identify conditions that might undermine healthy child development.

3. Ensure broad access to information about the impacts of alcohol, tobacco or other substance use on fetal development during pregnancy, and provide targeted campaigns to address high-risk populations.

Strategy 2: *Develop and deploy effective programs for parental education and support. For best results, these should be provided as early as possible and be reinforced over time.*

Parent education is an important prevention strategy for the period immediately following birth through into adolescence. Behavioural programs have demonstrated effectiveness. Particular effort should be made to engage and retain parents seeking assistance in dealing with child-related problems (Toumbourou et al, 2005).

1. Deploy a program of home visitation by professionals such as public health nurses for new parents, with targets including reducing infant exposure to harmful substance use and reduction of early developmental risk factors for the child's later involvement in problematic substance use. Regular home visits by a nurse from late pregnancy until the child's second birthday has shown good results for low-income, unmarried and adolescent women.

2. Utilize school transition points (entry into pre-school/kindergarten, middle school, high school) as opportunities to provide universal parenting education and follow-up as indicated.

Strategy 3: Promote school adjustment through a multi-component strategy addressing the needs of teachers, parents, and children.

Several strategies related to school adjustment have demonstrated long-term effectiveness. Important components include preparing children for transition, providing support and education to parents, and impacting on the school environment (Toumbourou et al, 2005).

1. Increase access to structured pre-school environments that provide intellectual stimulation and social interaction.

2. Provide teacher training in effective classroom management designed to enhance teacher-student relationships and reduce negative school peer interactions to help reduce the transition of early developmental risk into pathways of social marginalization.

3. Seek to engage parents in training opportunities aimed to improve skills for healthy child and family relationships, parenting skills, and awareness of family support networks.

4. Ensure curriculum and classroom practices support development of social and emotional competence.

Strategy 4: Develop and evaluate programs aimed at ensuring a smooth transition to independence and adult life and responsibilities.

Few programs aimed at this transition have been evaluated but policy makers and practitioners should nonetheless seek to identify and address those issues that impact on this important period.

1. Use the Planning 10 Curriculum and Graduation Portfolio in Grades 11 & 12 to help students prepare for transition to post-secondary education or the workforce.

2. Promote programs that provide youth opportunity to engage in volunteering and benefit from mentorship in order to develop employability skills and social responsibility.

3. Increase access to community supports and training programs that target young adults and address financial matters, positive relationships, and independent living.

Strategy 5: Create opportunities to address broad social dimensions.

In addition to prevention and health promotion efforts on the individual, organizational and community levels, complementary actions related to health, gender, income, and social policies that foster greater equity and healthier environments are needed (Health Canada, 1986). At this level, reducing harm associated with substance use is linked to policy in all branches and levels of government.

These efforts may take many forms to shape social environments or impact living and working conditions. While detailed recommendations on this level of health promotion are beyond the scope of health and social systems, they cannot be ignored in a broad strategic plan to prevent the harms from substance use.

1. Look for opportunities to mitigate risk factors by improving access to education and employment and addressing income inequalities.

2. Implement policies and services that improve access to psychosocial supports such as parenting support, crisis intervention, and grief counselling.

3. Give special attention to deprived neighbourhoods, communities and regions in BC when implementing all interventions related to key developmental stages.

Strategic Direction #2 – Prevent, Delay and Reduce Use of Alcohol, Cannabis and Tobacco by Teens

STATEMENT OF DIRECTION

Hazardous alcohol use and tobacco use cause 90% of all deaths, illnesses and disabilities related to substance use in BC. Smoking tobacco and drinking too much alcohol during teenage years can lead to later social and health problems – and increase the likelihood of other substance use. Preventing the uptake of tobacco use and delaying the use of alcohol by teenagers can be achieved through many strategies, thereby preventing serious problems in later life. Reducing tobacco use may also have beneficial effects on rates of cannabis use, but separate strategies also need to be developed and tested for reducing, delaying and preventing cannabis use in this age group.

INDICATORS OF PROGRESS

- Prevalence of tobacco use in BC measured by the Canadian Tobacco Use Monitoring Survey (CTUMS)
- Harmful cannabis and alcohol use assessed by school surveys and Canadian Addiction Survey (CAS)

KEY CONSIDERATIONS

While some people manage to use substances with few resulting harms, others develop serious mental or physical health problems, family problems, economic hardship, or legal problems. The uptake of substance use by school-aged children is of particular concern, as young people are in a critical period of growth for their bodies and minds. Research shows that the younger a person starts using a drug, the more likely they are to have problems – such as chronic dependence – with substances later in life (Brook, Whiteman, Finch & Cohen, 1998). Preventing or delaying the onset of substance use by youth is an important way to promote healthy behaviours and avoid serious health and economic costs down the road.

Using methods developed by the World Health Organization, it has been estimated that hazardous substance use accounts for 24% of all premature death and disability in BC: 12% from tobacco use, 10% from alcohol, and 2% from illegal drugs (BC Ministry of Health, 2001). Alcohol use accounted for the greatest amount of death and disability involving young people.

In 2003, more than 32% of the alcohol-related motor vehicle fatalities in BC were absorbed by individuals in the 15-24 age range. Alcohol-related motor vehicle accidents are a leading cause of death for young people contributing 11% of the total number of deaths in this age range (BC Motor Vehicle Branch 2003; BC Vital Statistics Agency 2003).

Alcohol and tobacco are both used more frequently than illegal drugs other than cannabis. The 2004 Canadian Addiction Survey found that among 15-19 year olds in BC, 12% were daily tobacco smokers, 15% were daily or almost daily cannabis users, and 31% drank hazardous quantities of alcohol on one day at least once a month. Both occasional and regular use of cannabis is now higher in this age group in BC than is tobacco use. Use of other illegal drugs was much less commonly reported (CCSA 2004).

The BC data from the 2004 Canadian Addiction Survey shows that many teenagers try cannabis without first smoking cigarettes, but few do so before using alcohol. Daily tobacco smokers are two and a half times more likely to use cannabis than non-smokers. Further research is needed to test the plausible hypothesis that effective interventions for tobacco and alcohol will also have benefits in terms of reductions in cannabis smoking.

The use of any substance, be it legal or illegal, early in adolescence is a reliable predictor of more intense and problematic substance use in young adulthood. The younger a person is when they begin using psychoactive substances, the greater the likelihood of using other substances and of developing substance use problems later in life. Intervening early to reduce or delay substance use initiation is therefore likely to have positive long-term health outcomes.

Price and physical availability of a substance are among the most important factors influencing use by young people. Strategic direction 5 will deal more specifically with influencing price. Strategies in this area may be particularly effective for young people, who are especially sensitive to price since they have more limited disposable income.

Physical availability can be affected for the general population by regulating the number, size, location and density of retail outlets for purchasing alcohol and tobacco. The Liquor Control and Licensing Act prohibits the sale and service of liquor to people under 19 years of age. It is also an offence for a minor to have liquor in their possession. Those laws are enforced by branch officers and police. The federal Tobacco Act and the BC Tobacco Sales Act prohibit the sale of tobacco products to minors and the laws are enforced by provincial Tobacco Enforcement Officers.

Prevention of the use of legal drugs by youth has the strongest evidence for effectiveness. With respect to illegal drugs, the methods of prevention shown to be most effective for alcohol and tobacco – increasing price and decreasing availability – are much more difficult to apply. Due to the nature of black markets, price and availability of illegal drugs are beyond the control of government regulation. Despite the dedicated efforts of police, the effects of enforcement efforts are limited at best, and over the long run have had negligible impact on either price or availability of illegal drugs in Canada.

School-based drug education shows some evidence of effectiveness in reducing or delaying onset of alcohol and tobacco use (evidence is far weaker for illegal drugs). The evidence suggests (McBride, 2005) that in order to be effective educational programs should be:

- Supported by solid research and evaluation design
- Developed in consultation with youth and shaped via pilot testing of interventions with youth and teachers
- Applied at relevant and pivotal stages in youth development, particularly within the health component of the student curriculum
- Interactive and focussed on skill development
- Targeted toward behaviour change goals that are responsive to, and inclusive of, different cultural views and realities
- Complemented by follow-up sessions in subsequent years
- Practical with information that can be immediately put into use by youth
- Delivered by well-trained and knowledgeable teachers with skills in interactive classroom instruction
- Widely available and supplemented by marketing strategies that expose and well-advertise the programs
- Resourced with adequate funding, and regularly reviewed for purposes of quality assurance

Often in prevention programming, youth are considered as a homogeneous group. However, taking gender and diversity into account in all aspects of prevention is important. For example, there are risk factors for potentially harmful substance use that are unique to or more serious for girls and young women.

Among these factors are greater vulnerability to the physical health impacts of substance use; greater impact of transitions such as moving or going to college; use of tobacco, alcohol or drugs to improve mood, increase confidence, cope with problems, lose inhibitions, enhance sex or lose weight; and more frequent experience of sexual and physical abuse which is highly correlated to substance use. Girls who have been sexually abused are more likely to use substances earlier, more often, and in greater quantities. Girls and young women are also entering child-bearing years, so their substance use patterns may have an impact on their fetus if they get pregnant.

STRATEGIES

Strategy 1: Restrict access to alcohol and tobacco by minors.

Restricting access is generally associated with decreased use. Consistent enforcement of sales laws, coupled with media coverage, has been shown to be effective in reducing sales to minors, youth smoking and underage drinking (Grube & Nygaard, 2005).

1. Increase enforcement to increase retailer compliance with age identification for tobacco and alcohol sales.

2. Use media to increase public awareness of harms related to use of alcohol, tobacco or cannabis by minors, and of enforcement efforts and consequences for non-compliance with current regulations.

3. Use media and parent education strategies to encourage responsible supervision of access to alcohol and tobacco in the home and social contexts.

Strategy 2: Ensure high quality, interactive and evidence-based education about alcohol, cannabis and tobacco are provided in all schools.

School drug education has a mixed review in the literature, but there is evidence for effectiveness when properly implemented. Investment in school drug education should include investment in research to improve practice and in adequate training to ensure quality standards are met (McBride, 2005).

1. Develop learning resources on alcohol and cannabis (similar to BC Tobacco Facts – see http://www.tobaccofacts.org/) for use in elementary and secondary school curriculum (Grades 4-10). In the early grades, this material should emphasize health and wellness, and should introduce issues related to the use of psychoactive substances as developmentally appropriate and just before normal initiation based on local substance use patterns.

2. Continue implementation of BC Tobacco Facts, and implement new alcohol and cannabis lessons in elementary and secondary school curriculum (Grades 4-10).

3. Provide teacher training to encourage interactive classroom teaching using the developed materials.

Strategy 3: Engage broad community participation in influencing social attitudes and responses to alcohol, tobacco, and cannabis.

1. Support community mobilization programs that aim to reduce perceived favourable community norms, and restrict access to alcohol, tobacco and cannabis. Integrated community programs have demonstrated effectiveness in reducing initiation, escalation to regular use, and estimates of peer substance use (Toumbourou et al., 2005).

2. Using a community systems approach, identify and address those environmental influences that undermine prevention efforts and reinforce problem behaviours. For example, efforts aimed at increasing pre-adolescent resistance skills will be undermined if retail sales practices provide easy access for adolescents to tobacco or alcohol, or if social sources are readily available. Self-management skills provided to at-risk individuals will be of limited value if efforts are not made to address social and economic factors which constrain the individual's ability to act. Policy makers must constantly be aware of unintended consequences that "quick and easy solutions" to these issues may produce.

3. Develop social marketing campaigns utilizing mass media to reinforce the other initiatives. There is little evidence that these campaigns are effective in isolation, but have potential to encourage less harmful substance use behaviours and influence attitudes and perceived norms when used in combination with other approaches.

Strategy 4: Increase engaging activities for teenagers in tobacco- and alcohol-free contexts.

There are several promising strategies that need further study but should nonetheless be implemented. Social environment has a major impact on substance use behaviour, so providing healthy substance-free environments should be a priority for all communities. For young males in particular, sporting clubs can often be a venue in which cultures supporting risky alcohol and other drug use flourish (Duff et al., 2004) and hence careful consideration of social activities for teenagers around events is needed. Alternative activity programs have received support from systematic literature reviews of what works in prevention (e.g. Tobler, 1992).

1. Encourage implementation of sports campaigns that include education about harms from substance use and consider expanding beyond sports to other recreational and social contexts.

2. Increase exposure to mentorship programs that include careful matching of mentors to clients, training, ongoing support, and evaluation.

3. Utilize peer involvement to create healthy contexts and activities and to reduce perceived favourable norms. Be aware that peer interventions that aggregate youth with behaviour problems have the potential to encourage negative outcomes.

Strategic Direction #3 – Reduce Risky Patterns of Use

STATEMENT OF DIRECTION

British Columbia's strategy for addressing the problems related to substance use acknowledges that the use of psychoactive substances ranges from beneficial or non-problematic to problematic use (related to mode of administration, intoxication, chronic use, or dependence). A prevention strategy must focus on reducing harm by addressing those patterns of substance use associated with the highest risk. In some cases, this will mean the goal is to eliminate or at least reduce use whereas, in other situations, it may involve identifying and reducing risky patterns of use or promoting an understanding of safer use.

INDICATORS OF PROGRESS

The best available population survey data should be used to assess use patterns and trends. For tobacco and cannabis this will be the bi-annual Canadian Tobacco Use Monitoring Survey (CTUMS). For alcohol this will be future Canadian Addiction Surveys or any larger BC-specific surveys that are comparable with present estimates.

KEY CONSIDERATIONS

Patterns of psychoactive substance use are a determining factor in how much harm a substance may cause to individuals, families and society. For example, the ceremonial use of tobacco by aboriginal people according to time-honoured traditions has very different potential benefits and harms than the daily consumption of cigarettes by a dependent tobacco smoker (BC Ministry of Health and Ministry Responsible for Seniors, 2001).

Likewise, patterns of use of alcohol among different cultural groups give rise to different health risks and protective factors. The extent to which alcohol is consumed at meal times with food, for example, can influence health and safety outcomes and is greatly influenced by cultural practices.

Potential harms from other types of substances may be reduced by cultural norms that regulate use and behaviours in ways that are socially integrative rather than harmful (Coomber & South, 2004; Zinberg, 1984). Distinguishing between beneficial, non-problematic and problematic patterns of use is useful in planning for preventing and reducing harm.

In BC, alcohol is responsible for the majority of substance-related deaths and hospital episodes in young people. The vast majority of alcohol consumed by young people is consumed in ways that place the drinker and others at risk of acute harm. Analyses of the 2004 Canadian Addiction Survey by CARBC (2005) show that in the 18 to 25 year age groups, 84% of the alcohol consumed by males and 86% by females is on high risk occasions (more than 5 drinks for men and more than 4 for women). Prevention efforts can be effective by focusing on this risky pattern of alcohol use and by encouraging safer levels of use as well as delayed onset of use.

Tobacco smoking is the single largest preventable cause of disease and death in BC, and the vast majority of this is the result of long-term chronic use. The effect of quitting smoking entirely is a rapid decline in the risk of both mortality and morbidity. Reducing tobacco consumption does not make it safe, but can reduce the risks associated with use.

Poly-drug use is a common pattern of drug use that raises risks for health and social harms. People who use substances may use them in combinations that change or amplify their effects, increasing the potential for impairment, overdose, and other harms. For example, driving after combining alcohol with other drugs increases the risk of a motor vehicle crash more than does alcohol alone (Movig et al, 2004). Similarly, the risk of accidental injury (such as falls among the elderly) or overdose from some types of drugs, such as opioids (e.g. heroin) or benzodiazepines (e.g. Xanax™), is greatly increased when they are used in combination with alcohol (BC Office of the Provincial Health Officer, 2003). Early involvement in poly-drug use is a risk factor for later drug use problems. Intervening early with people who engage in various types of substance use will reduce the chances of later drug problems.

The use of psychoactive pharmaceutical drugs can be of great benefit to patients for whom such treatment is indicated. However, such substances also pose potential harm for some people, especially when they are used in a way other than prescribed or in combination with other substances. For example, methylphenidate (or Ritalin™) may sometimes be diverted to a schoolyard black market and unsanctioned recreational use (Poulin, 2001). Short-term use of benzodiazepines impairs cognitive functioning, memory, balance and increases the risk of dependence.

Long-term use of benzodiazepines or opioids increases the chances of chronic dependence to these types of drugs. Combining pharmaceutical drugs with alcohol or illegal street drugs creates a risk of adverse drug reactions or overdose. Women and seniors have particular vulnerabilities to problematic use of prescription psychoactive drugs, as they are often prescribed these substances at higher rates than the general population (Currie, 2003; Therapeutics Initiative, 2004).

STRATEGIES

Strategy 1: *Promote clear messaging that addresses safer substance use and informs risk-reducing choices.*

Clear and consistent messages are required in order to implement effective multi-dimensional strategies. Particular attention should be given to providing credible information on the increased risks related to the use of psychoactive substances by children and adolescents. Care needs to be taken not to overstate risks, which may result in the unintended consequence of messages not being taken seriously by target groups such as adolescents.

1. Develop a primer of clear messages based on the spectrum of use model and promote their use by program developers, media personnel and other professionals in reaching both universal and targeted populations.

2. Develop and disseminate a set of low-risk drinking guidelines – based on a review of the latest science carefully interpreted for BC context.

3. Increase public awareness of these messages through a province-wide multi-level media/communications program.

Strategy 2: *Promote programs that encourage safer drinking and tobacco cessation among 19-24 year olds, and that can be delivered through a variety of institutions that engage this age group.*

Problematic patterns of substance use are particularly common among the 19-24 age group. Implementation of clear policies and programs within institutions that serve this group have shown significant impact, but more studies are needed.

1. Encourage all institutions serving 19-24 year olds to have clear and publicized policies on alcohol and tobacco.

2. Develop and promote a toolkit of materials that would assist institutions to address smoking and binge drinking.

Strategy 3: *Promote the development of programs that encourage safer drinking and tobacco cessation among Aboriginal peoples.*

The social and economic situations of Aboriginal peoples, exacerbated by the devastating effects of colonialism and residential schools, pose serious challenges to improving the health outcomes for this population. Aboriginal peoples suffer higher rates of disease and lower rates of health status than their non-Aboriginal counterparts.

One contributing factor is the higher rates of problematic alcohol and tobacco use. For example, a 1997 survey found that 43% of Aboriginal peoples in BC age 12 and over identified themselves as smokers at that time. (B.C. Ministry of Health and Heart and Stroke Foundation of B.C. & Yukon)

Evidence suggests that establishing partnerships between Aboriginal communities and other organizations (i.e., federal or provincial governments, non-profit entities, etc.) is essential in mobilizing their strengths and resources in order to effectively respond to their unique needs and realities. In order to be successful, health prevention and promotion programming targeted to Aboriginal peoples must include their full engagement in the planning, implementation and evaluation phases.

Strategy 4: Promote brief interventions to address alcohol, tobacco, cannabis and other drug use.

The evidence for the effectiveness of brief intervention in primary care and hospital settings to address harms from alcohol and tobacco is very strong. Enough evidence exists to suggest programs should be implemented and evaluated in other settings as well. It can be more cost-effective and achieve better results when screening for brief interventions is included within a comprehensive health and wellness assessment including nutrition and physical exercise as well as substance use. The availability of convenient and accurate tools and appropriate training are essential.

1. Encourage and support, through a system of professional detailing, primary care and other health care providers to screen their patients for hazardous substance use, utilize brief interventions with individual follow-up and promote self-management materials as appropriate.

2. Work with employers and unions to encourage the development of clear workplace policies, and support these with educational materials and training in brief interventions applicable to the workplace.

3. Develop and promote innovative computer-assisted and internet-based resources for people to self-assess their use of psychoactive substances and receive individually tailored feedback and monitoring.

4. Support brief intervention programs in all secondary schools, and provide the necessary support materials and training.

5. Support brief intervention programs in justice and corrections for police and correctional staff, and provide the necessary support materials and training.

6. Improve access to telephone-based brief intervention services.

Strategy 4: Promote the development of programs that encourage the safer use of psychoactive medications to maximize benefit and minimize harm.

Psychoactive medications can provide important health benefits but can also lead to significant harms. Both public awareness and professional practice are essential to minimizing the potential harm.

1. Develop and implement evidence-based interventions that improve prescribing practices among BC physicians. Such programs could include academic detailing (a process by which a health educator visits a physician in his/her office to provide a 15 to 20 minute educational intervention on a specific topic) and notification and feedback targeted to high-prescribing physicians.

2. Develop better awareness among health care professionals on alternatives to benzodiazepine prescription for sleep and anxiety problems, as well as improved skill in managing benzodiazepine dependence.

3. Improve knowledge transfer to health care professionals and consumers regarding potential drug interactions by expanding physician access to Pharmanet drug database and electronic drug interaction information.

4. Disseminate quality information to improve consumer awareness of drug actions and interactions.

Strategic Direction #4 – Creating Safer Contexts

STATEMENT OF DIRECTION

Harm reduction seeks to prevent and reduce the harms associated with substance use without necessarily requiring the reduction of use. Harm reduction strategies often focus on changing the environment in significant ways that will result in reduced harm for the community which, of course, includes the people who use psychoactive substances. Such strategies are complementary to those which seek to create changes in individual behaviour. The history of harm reduction is connected to the beginning of the HIV epidemic and injection drug use as a means for viral transmission. Harm reduction continues to be associated with strategies to prevent the spread of blood-borne illnesses related to injection drug use. However, the concept has much wider application, and is used here to draw attention to a wide range of effective strategies for preventing harm by creating safer contexts.

INDICATORS OF PROGRESS

- Night-time attendances to hospital emergency departments for treatment of injuries provides a proxy for alcohol related injuries
- Attendances at hospital emergency departments for overdose and/or poisoning
- Incidence of alcohol-related road trauma
- Incidence of HIV, HCV and HBV among injection drug users

KEY CONSIDERATIONS

Alcohol is significantly associated with crime, particularly violent crime. Alcohol intoxication, as well as the use of other central nervous system depressant drugs, reduces the likelihood that conflicts between people will be resolved through verbal means. Violent crimes are disproportionately associated with drinking in licensed premises and usually involve males (particularly young males) (Haines & Graham, 2005).

Alcohol continues to be a contributing factor in domestic violence, with close to half of spousal assault incidents in BC related to alcohol (BC Ministry of Public Safety and Solicitor General, 2004). BC residents, along with those in other western provinces, report higher than average experience of harm from others' use of alcohol—35.4% of British Columbians said they had experienced such harm in the past year (Canadian Centre on Substance Abuse, 2004).

Impaired operation of a vehicle still makes up the majority of Criminal Code traffic offenses, although the frequency of this type of offence has decreased 4% over the past decade (BC Ministry of Public Safety and Solicitor General, 2004). However, this may reflect a reduction in enforcement efforts rather than a change in drinking and driving behaviour in BC.

Alcohol-impaired driving is a contributing factor in a significant proportion of motor vehicle crashes. Attending police officers determined that alcohol was a contributing factor in 23.5% of the fatal collisions in British Columbia. Yet police reports tend to underestimate the presence of alcohol in collisions. Toxicology tests on fatally injured drivers in Canada show 35% were found to have been drinking (Transport Canada, 2004). Young male drivers are predominately responsible for alcohol-related collisions. Of all collisions attended by police where alcohol was a considered a factor, 79.3% of the drivers were male (BC Motor Vehicle Branch, 2003).

Strategies for reducing impaired driving include random breath testing, which has been shown to be effective in reducing fatalities, injuries, and road crashes. In order to be successful, these programs need high-visibility and a public perception that there is a high chance of being caught. Public education has made some gains in reducing impaired driving and consequent harms over the past few decades and warrants continuation.

The exposure of adults and children to second-hand smoke is a considerable risk factor for harm to others from tobacco smoking (BC Ministry of Health Services, 2004). Although British Columbia has made significant progress in reducing second-hand smoke exposure through legislation that protects workers, some people remain at risk for illness from other peoples' smoking. Increasing education and other measures to reduce environmental smoke in places such as homes and automobiles is an important part of improving the health of British Columbians.

The practice of sharing injection equipment for injection drug use continues to be a primary means of transmission for HIV and hepatitis C. Additionally, injection drug use is the cause of other illnesses and infections such as endocarditis (BC Ministries of Health Services and Health Planning, 2003; Broadhead, et al., 2002). Health Authorities in British Columbia offer needle exchange and other harm reduction services in accordance with best practice guidelines (BC Centre for Disease Control & BC Ministry of Health Services, 2004). However, access to such services varies in different jurisdictions and efforts need to be made to ensure that vulnerable populations—those at greatest risk of contracting blood-borne pathogens through injection drug use—are effectively engaged. To accomplish this, services must be easily accessible and low threshold wherever possible, as well as culturally, demographically and gender appropriate.

STRATEGIES

Strategy 1: Develop and implement evidence-based programs to increase safety and promote social responsibility around licensed premises in order to reduce violence and injuries.

Injuries account for a very substantial portion of the harm related to alcohol and much of this relates to the behaviour of young males in or about licensed premises. These harms increase where policies and practices encourage the concentration of alcohol outlets. Nonetheless, several actions have shown significant effectiveness in reducing harm when applied consistently and especially when implemented in combination (Room et al 2005; Grube & Nygaard 2005).

1. Encourage standard policies for the training of all staff at licensed premises.

2. Improve the process for active enforcement of regulations related to serving intoxicated or underage clients and also to health and safety issues.

3. Restrict liquor outlet density so as to reduce intense competition between establishments resulting in cheap alcohol and lax serving standards. This is of particular concern in so-called "entertainment districts" that require extra attention to infrastructure planning (e.g. transportation, garbage removal).

4. Introduce a publicly reported monitoring system that tracks serious alcohol-related harms associated with drinking at particular licensed premises. This system should include violent incidents and data on 'last place of drinking' for all drinking and driving offenders.

Strategy 2: Implement actions to decrease the harm from impaired driving.

Taken together impaired-driving counter measures have demonstrated effectiveness and should be vigorously applied (Room et al. 2005).

1. Introduce a highly publicized and highly visible system of random breath testing. These have been shown to be significantly more effective than standard sobriety checkpoints currently used in BC.

2. Identify, target and profile problem spots associated with high incidence of harm.

3. Introduce legislation to lower the accepted blood-alcohol concentration in drivers from 0.08% to 0.05%. This has become the common standard in Europe and much of Australasia and has demonstrated significant decreases in drink driving related harm (Zador, Lund, Fields & Weinberg, 1989).

4. Maintain graduated licensing and blood-alcohol limit of zero for young or new drivers.

Strategy 3: Implement actions to decrease the harm from second-hand smoke.

Young children exposed to passive, or second-hand, smoke have a higher risk of ear infections, asthma, bronchitis and pneumonia than children of non-smokers. In the United States, surveys show that almost 40 percent of children under five live with a smoker.

1. Develop and implement a social marketing campaign to restrict the exposure of children and others to second-hand smoke in their homes and private vehicles.

2. Promote effective smoke-free school policies with a high degree of perceived enforcement.(Wakefield et al. 2000)

3. Promote consistent and repeated messages from health care professionals and others that reinforce the risks and encourage behaviour change.

Strategy 4: Build on gains made in reducing harm associated with illegal drug use.

1. Improve access to needle and syringe distribution programs in both urban and rural settings.

2. Ensure fairly immediate access to primary response services that provide brief intervention and referral to other services.

3. Establish multi-faceted support centres for users (sleeping quarters, cheap food, linkages to services) and a multi-component system (wet-damp-dry housing, contact centres, employability skills training and apprenticeship/experience programs).

4. Address barriers that inhibit access to treatment services, including methadone treatment, and expand the range of treatment services offered.

5. Ensure that a full range of substance use services, including treatment and harm reduction programs, are available and promoted within all corrections facilities and programs operating in British Columbia.

Strategy 5: Develop monitoring and reporting systems for injuries and viral infections associated with substance use.

1. Expand the Canadian Community Epidemiology Network on Drug Use (CCENDU) monitoring system to include provincial, regional and local estimates of substance use related injuries employing WHO guidelines on epidemiological monitoring.

2. Report annually on provincial, regional and local rates and incidence of HIV, HCV and HBV associated with injection drug use.

Strategic Direction #5 – Influencing Economic Availability

STATEMENT OF DIRECTION

As with other products, the prices and marketing of alcoholic drinks, cigarettes, cannabis and other illegal drugs strongly affect levels of consumer demand. Several effective strategies are available to governments and local communities to influence the price of psychoactive substances, thereby reducing consumption and related problems. Young people and heavy consumers of tobacco and alcohol, who are particularly at risk of harm, are most likely to reduce their consumption when costs increase and marketing strategies are controlled.

INDICATORS OF PROGRESS

- Median and cheapest prices of popular brands of alcohol and tobacco
- BC municipalities with minimum drink-price bylaws (restricting "happy hours" and price-wars)

KEY CONSIDERATIONS

Tobacco dependence and excessive alcohol consumption together cause more than 90% of drug-related deaths in British Columbia. Excessive alcohol consumption is the leading contributing cause of death among British Colombians 25 years of age or under, playing a role in fatal road crashes, suicide, homicide and poisoning deaths.

Making alcohol and tobacco products less accessible by increasing their price has consistently been identified as the most effective strategy for reducing the burden of disease and social harm associated with use of these substances (Loxley, et al., 2004; Babor, et al., 2003). Increases in the price of alcoholic drinks have been shown to reduce liver cirrhosis deaths, alcohol-related road crashes and assaults.

By contrast, low prices, largely associated with drink discounts, special offers and happy hours, have been correlated with binge-drinking, physical violence, impaired driving and traffic deaths (Babor, et al., 1978; Farrell, et al., 2003; Homel and Tomsen, 1993; Kuo, et al. 2003).

Taxation has been the single most effective strategy for reducing demand for tobacco and alcohol, especially among the young and high quantity users who are more sensitive to price changes (U.S. Department of Health and Human Services, 2000; Chaloupka, 1999). A 10% rise in the retail price of tobacco will reduce smoking by about 4% in economically developed countries such as Canada.

Tax increases at the provincial sales or federal excise level are particularly cost-effective because of the low expense associated with introducing these measures and the potential for substantial revenues.

There are also opportunities at the local level to minimise discounting and point-of-sale advertising of alcohol and tobacco products. Liberal sales and marketing practices are strong predictors of alcohol-related harm, especially among new and young drinkers (Babor, et al., 2003; Room, et al., 2003).

Advertisement-free zones and total bans on ads are associated with lower rates of binge-drinking and vehicular fatalities (Babor, et al., 2003; Kuo, et al., 2003); and regulations on deep discounts and promotional specials on substances have the effect of maintaining standard costs and thus controlling for the harms related to lower prices, including disease, injury, death, violence and crime (Chaloupka, et al., 2002). Accords between business, law enforcement and local government have also shown success in regulating alcohol use and making licensees accountable for irresponsible marketing and for promotions strategies that glorify overindulgence and cheap drinks (Homel, et al., 1997; Lincoln and Homel, 2001; Stockwell, 2001; Vaughan 2001).

The benefits of higher prices are usually offset to only a limited degree by smokers selecting higher tar and nicotine cigarettes, by drinkers selecting cheaper brands with high alcohol content and by both seeking out illegal tax-free alternatives. To be most effective, alcohol and tobacco taxes must be linked to the cost of living and not be allowed to fall over time.

These taxes must also be directly linked to the alcohol content of drinks and the number of cigarettes in cigarette packs. Lower rates of tax for lower-strength alcohol drinks have been shown to encourage drinkers to shift to these products and thereby lower their risk of alcohol-related harm (Stockwell and Crosbie, 2001).

One criticism of high taxation strategies is that while they improve health and safety outcomes for all social groups, they may also have some adverse impacts on economically disadvantaged sections of the community. Potential adverse impacts can be minimised through innovative welfare arrangements that protect allowances for essential services and improve access to treatment services. In addition, reductions in public and domestic violence and improvements in health and safety are significant benefits that may off-set these potential disadvantages, especially for women and children (Stockwell et al., 1998).

Maintaining high taxation on tobacco has strong and broad support in the community. Public opinion in Canada on high taxation for alcohol products, however, is mixed (Anglin et al. 2001; Room et al., 1995).

In other countries there is strong community support for the concept of a "harm reduction levy" on alcoholic drinks in which a few cents per drink are collected to fund treatment and prevention programmes (Lang, et al., 1995; also Wagenaar et al., 2000). Strong support for taxing higher alcohol content drinks at higher levels has also been demonstrated elsewhere (Loxley et al., 2000). Public opinion on these issues has not been tested in Canada.

STRATEGIES

Strategy 1: Restrict price discounting and advertising of full and high-strength alcohol and tobacco at the retail level

1. Explore opportunities for the province and local municipalities to restrict advertisement of the prices of tobacco and alcohol products, especially discounts.

2. Explore opportunities for municipalities and universities to collaborate on eliminating interior and exterior alcohol advertisements on and near college and school campuses.

3. Develop municipal laws to standardize the price of alcohol products across licensed establishments.

4. Impose fines on, or suspend or revoke the licenses of, businesses offering discounts or special rates on alcohol and tobacco products (including two-for-one features, coupons, and cheap specials in return for high-priced entrance fees).

Strategy 2: Create opportunities for promoting consumption of lower alcohol content and non-alcoholic drinks through price incentives.

1. Develop provincial and municipal alcohol pricing policies as a requirement of occasional license permits.

2. Conduct public health and safety risk assessments of licensed premises which examine, among other factors, the costs and benefits of the more attractive pricing of low and non-alcoholic drinks versus other alcoholic drinks.

3. Explore local agreements between municipalities, police and liquor licensees which promote responsible service and pricing policies that favour lower alcohol and non-alcoholic drinks.

4. Encourage the development of low alcohol brands (revenue neutral pricing streams that favours low alcohol drinks).

Strategy 3: Promote industry accords and community action projects to increase licensee accountability and expand responsibility for harm reduction

1. Encourage local accords between municipalities, police and liquor licensees or introduce municipal bylaws which promote responsible service, limit price discounting and ban all forms of local price advertising.

2. Require that licensees prepare, circulate and abide by a Code of Practice which distinguishes appropriate from inappropriate service behaviour.

3. Engage the media in monitoring the success of industry accords, and in reporting on offenders and problem establishments.

Strategy 4: Increase taxation on liquor and tobacco products in accordance with current costs of living and supply and demand

1. Review taxation levels and options to ensure minimum prices of tobacco and alcohol are not too low.

2. Align taxes with liquor and tobacco quantity and weight, such that higher strengths of alcoholic beverages and greater numbers of cigarettes and volumes of loose tobacco see increasingly higher taxation.

3. Adjust federal excise and provincial sales taxes on a consistent basis to match fluctuations in the cost of living.

4. Impose an additional levy on full and high strength alcohol and tobacco products to directly fund treatment and prevention research.

Key Elements of System Capacity

In order to implement the integrated and comprehensive approach to preventing and reducing the harm from substance use put forward in this paper several key elements of system capacity need to be addressed. The five issues briefly discussed in this section have each been identified as needing particular attention.

LEADERSHIP

Strong leadership is a critical success factor. The key responsibilities of leadership are strategic direction, healthy public policy development, and collaboration with multiple sectors and advocacy. Strategic leadership is required to:

- Articulate and promote a shared vision for preventing and reducing harms from substance use in British Columbia
- Engage and sustain the participation of a wide variety of stakeholders
- Foster relationships and alliances with partners
- Mobilize resources and inspire public support
- Facilitate the development of collaborative responses
- Nourish innovative research and knowledge transfer

Effective leadership requires the development of a range of skills and competencies that must be fostered and enhanced over time. Concerted efforts are required to recruit and support skilled and respected individuals to assume key positions of responsibility in addressing problematic substance use.

PARTNERSHIPS AND COLLABORATION

The drivers of health lie outside the health sector (Marmot, 1999). This holds true for the prevention and reduction of harm from substance use. The need for intersectoral partnerships and collaboration is clearly defined by the social, economic and environmental determinants of health, which cannot be influenced by health sector action alone.

Intersectoral collaboration makes possible the joining of forces, knowledge and means to understand and solve complex issues whose solutions lie outside the mandate and capacity of a single sector. It promotes and helps achieve shared goals in many areas, including research, planning, policy, practice and resource allocation (FPT Advisory Committee on Population Health, 1999).

Intersectoral collaboration has two dimensions: a horizontal dimension that links different sectors at a given level, and a vertical dimension that links different levels within each sector.

The potential benefits include an enhanced capacity to tackle and resolve complex health and social problems which have eluded individual sectors for many years, a pooling of resources, knowledge and expertise, and reduced duplication of effort.

Conditions for successful intersectoral collaboration are:

- Shared values, interest and alignment of purpose
- Shared leadership, accountability and rewards
- Senior governmental and community champions
- Appropriate horizontal and vertical linkages
- Supportive policy environment
- Engagement of key stakeholders, including consumers, communities, service providers, policymakers and funders
- Investment in alliance building and consensus-based decision making
- Concrete objectives and visible results
- Team building and supports
- Strong information and evidence base
- Practical models, tools and mechanisms to support implementation

WORKFORCE DEVELOPMENT

The prevention and reduction of harms from substance use creates many workforce opportunities and challenges for health authorities, service providers and community partners. Chief among these is the harmonization of diverse organizational structures and processes, service philosophies and practices, and work cultures. Ongoing collaborative efforts among academic institutions, professional associations and employers are needed to ensure an integrated workforce has the knowledge, skills, resources and supports to respond effectively to consumer needs.

A system of inter-professional competency definitions similar to the National Vocational Qualifications in the UK may provide a framework. It ensures the workforce has the necessary knowledge and training to perform effectively across sectors, disciplines and professions. Inter-professional education (learning together) provides a further mechanism that promotes collaboration and identifies the requisite competencies for collaborative practice. It facilitates transfer of knowledge and integration of activities across the entire continuum of services through interdisciplinary dialogue. Service providers learn to work together in shared problem solving and decision making for the benefit of clients and consumers. In so doing, they develop mutual understanding and respect for the contributions of various disciplines.

SURVEILLANCE, RESEARCH AND EVALUATION

A comprehensive response requires regular, well-conducted surveillance, research and evaluation concerning the social and structural determinants, epidemiology, prevention and treatment of harmful substance use. A robust surveillance, research and evaluation capacity provides the evidence needed to formulate sound policies and practices, allocate resources effectively and efficiently, and support decision making at all levels preventing and reducing harms from substance use. It is an avenue for innovation, learning and quality improvement.

The strategies in this Paper have been selected on the basis of available research as being effective in preventing and reducing the harm from substance use, provided they are implemented well. To ensure sound implementation and the achievement of intended results, the strategies will need to be carefully monitored through a comprehensive surveillance system. Ideally, such a system will operate consistently at the provincial, regional and local level. It will track patterns of risky substance use and related impacts on public health, safety and order, as well as patterns of social risk and protection in communities.

A comprehensive surveillance system will also include sex, gender and diversity variables, support sex and diversity disaggregation of data, and support gender and diversity analysis related to substance use and the consequences of alcohol, tobacco and other drug policy. Thus outcomes will be monitored both for the population as a whole in different regions and also for particular sub-groups where available data permit this.

Models for surveillance are the National Alcohol Indicators Project (per capita consumption, patterns of drinking, alcohol-caused mortality, hospital episodes, road crashes and violence – see Chikritzhs et al., 2003) and Australia's Illicit Drug Reporting System (trends in injecting drug use and party drugs, drug purity and price, see http://ndarc.med.unsw.edu.au/ndarc.nsf/website/IDRS) which use nationally comparable data collection systems for different jurisdictions in a country with a similar federal structure to Canada.

In addition to surveillance and evaluation, community and research partnerships will be required for the development and testing of new strategies with a strong rationale in areas of identified need.

KNOWLEDGE EXCHANGE

In British Columbia, there is a growing need to facilitate dialogue and the exchange of knowledge about substance use and the associated harms. This exchange must ensure that different types of knowledge are shared between all communities of interest, including research, policy and practice.

Effective knowledge exchange requires opportunities for in-person dialogue within and between communities of practice. Evidence suggests that knowledge producers and knowledge users understand and integrate information best when they work together to ensure the dialogue addresses current real-world circumstances (Lavis, Robertson, Woodside et al., 2003).

Knowledge exchange also requires attention to improving public literacy on a whole range of related issues in order to raise the level of public discourse. The effective transfer of knowledge is enhanced through efficient and accessible technologies such as the Internet, printed materials and other media.

Conclusion

Addressing the harms associated with psychoactive substance use begins with prevention. The goal of all prevention strategies in this paper is to protect and improve the health of British Columbians by minimizing the harm to individuals, families and communities from the use of tobacco, alcohol, certain pharmaceuticals and illegal drugs. Many of the prevention strategies focus more specifically on increasing knowledge about psychoactive substances, delaying the onset of first use, reducing problematic patterns of use, reducing use to safer levels, supporting abstinence, especially for young adolescents, and supporting environments that promote health.

The five strategic directions that evidence suggests will have the most input in mitigating harms from substance use serve as a starting point for focusing efforts across British Columbia. Influencing developmental pathways, delaying and preventing alcohol, tobacco and cannabis use during adolescence, reducing risky patterns of substance use, creating safer contexts and influencing economic availability will build the Province's capacity to prevent and reduce the harms associated with substance use.

To be effective, prevention efforts must be comprehensive, evidence-based and implemented beyond the direct responsibility of the health care delivery system. Other public systems in British Columbia, including education, social services, police, housing, courts, corrections, federal, Aboriginal and local governments, have a role to play. The strategies outlined in this paper will inform the Ministry of Health's efforts to seek out partnerships with other ministries, agencies and levels of government to reduce and prevent harm from problematic substance use in British Columbia, and they will complement, guide and support the efforts already being undertaken at the provincial level in communities and regions throughout the province.

References

Anglin, L., Kavanagh, L., Giesbrecht, N. (2001) Alcohol-Related Policy Measures in Ontario: Who Supports What and to What Degree? *Canadian Journal of Public Health*. 92(1), 24-28.

Anderson, J.F., McEwan, K.L. & Hrudy, W.P. (1996). The effectiveness of notification and group education in modifying prescribing of regulated analgesics[RCT]. *Canadian Medical Association Journal*. 154, 31-39.

Babor, T. F., Mendelson, J. H., Greenberg, I., Kuehnle, J. (1978). Experimental analysis of the "happy hour": Effects of purchase price on alcohol consumption. *Psychopharmacology*. 58, 35-41.

Babor, Thomas, et al. (2003). *Alcohol: No ordinary commodity: Research and public policy*. Oxford: Oxford University Press.

BC Centre for Disease Control & BC Ministry of Health Services. (2004). *BC harm reduction supply services policy and guidelines*. Vancouver: BC Centre for Disease Control. Available online at: www.bccdc.org/content.php?item=194

BC Minister of State for Mental Health and Addiction Services (2004). *Crystal meth and other amphetamines: An integrated BC strategy*. Victoria: BC Ministry of Health Services. Available online at: www.healthservices.gov.bc.ca/mhd/pdf/meth_final.pdf

BC Ministry for Children and Families (2004). *Child and youth mental health plan for British Columbia*. Victoria: BC Ministry for Children and Families. Available online at: www.mcf.gov.bc.ca/mental_health/mh_publications/cymh_plan.pdf

B.C. Ministry of Health and Heart and Stroke Foundation of B.C. & Yukon. (1997). *Tobacco use among aboriginal peoples in tobacco use in British Columbia*. Victoria: Angus Reid Group. E1-37.

BC Ministry of Health. (2001). *Evaluation of the burden of disease in British Columbia*. Strategic Policy and Research Branch. Victoria, BC.

BC Ministry of Health and Ministry Responsible for Seniors. (2001). *Honouring our health: An aboriginal tobacco strategy for British Columbia*. Victoria: Ministry of Health and Ministry Responsible for Seniors. Available online at: www.healthservices.gov.bc.ca/aboriginal/pdf/honouring.pdf

BC Ministry of Health Planning and BC Ministry of Health Services. (2003). *Priorities for action in managing the epidemics: HIV/AIDS in BC 2003-2007*. Victoria: BC Ministry of Health Planning. Available online at: www.healthservices.gov.bc.ca/hiv/pdf/hivpriorities.pdf

BC Ministry of Health Services. (2004a). *BC's tobacco control strategy: Targeting our efforts*. Victoria: BC Ministry of Health Services. Available online at: www.tobaccofacts.org/pdf/bc_strategy.pdf

BC Ministry of Health Services. (2004b). *Service plan 2004/05-2006/07*. Victoria: BC Ministry of Health Services. Available online at: www.bcbudget.gov.bc.ca/2004/sp/hs/hs.pdf

BC Ministry of Health. (2005). *Harm reduction: A British Columbia community guide*. Victoria: BC Ministry of Health. Available online at: www.health.gov.bc.ca/prevent/pdf/hrcommunityguide.pdf

BC Ministry of Public Safety and Solicitor General. (2004). *Police and crime: summary statistics 1994-2003*. Victoria: BC Ministry of Public Safety and Solicitor General. Available online at: www.pssg.gov.bc.ca/police_services/publications/index.htm

BC Motor Vehicle Branch (2003). Traffic collision statistics: Police-attended injury and fatal collisions. Victoria: BC Motor Vehicle Branch. Available online at: www.icbc.com/Library/research_papers/Traffic/

BC Office of the Provincial Health Officer. (2004). Prevention of falls and injuries among the elderly: A special report from the office of the Provincial Health Officer. Victoria: BC Office of the Provincial Health Officer. Available online at: www.healthservices.gov.bc.ca/pho/pdf/falls.pdf

BC Office of the Provincial Health Officer. (2003). *The health and well-being of people in British Columbia: Provincial health officer's annual report 2002*. Victoria: BC Office of the Provincial Health Officer. Available online at: www.healthservices.gov.bc.ca/pho/pdf/phoannual2002.pdf

BC Vital Statistics Agency. (2003). *Selected vital statistics and health status indicators: One hundred and thirty-second annual report 2003*. Victoria: BC Vital Statistics.

BC Women's Hospital & Health Centre and BC Centre of Excellence for Women's Health (2004). *A women's health strategy for British Columbia: Advancing the health of girls and women*. Vancouver: BC Women's Hospital & Health Centre and BC Centre of Excellence for Women's Health. Available online at: www.bccewh.bc.ca/PDFs/pwhs.pdf

Broadhead, R.S., Kerr, T.H., Grund, J.P. & Altice, F.L. (2002). Safer injection facilities in North America: their place in public policy and health initiatives. *Journal of Drug Issues*. 32(1). 329–55.

Brook, J.S., Whiteman, M., Finch, S. & Cohen, P. (1998). Mutual attachment, personality, and drug use: Pathways from childhood to young adulthood. *Genetic, Social and General Psychology*. 124(4). 492-511.

Canadian Centre on Substance Abuse. (2004). *Canadian addictions survey (CAS): A national survey of Canadians' use of alcohol and other drugs—Prevalence of use and related harms: Highlights*. Ottawa: Canadian Centre on Substance Abuse.

Canadian Centre on Substance Abuse. (2005a). Canadian addictions survey (CAS): A national survey of Canadians' use of alcohol and other drugs—Prevalence of use and related harms: Detailed Report. Ottawa: Canadian Centre on Substance Abuse

Canadian Centre on Substance Abuse. (2005b). *National Framework for Action to Reduce the Harms Associated with Alcohol and Other Drugs and Substances in Canada: Answering the Call*. Ottawa: Canadian Centre on Substance Abuse.

Canadian HIV/AIDS Legal Network. (2005). "Nothing about us without us" – greater, meaningful involvement of people who use illegal drugs: A public health, ethical, and human rights imperative. Toronto: Canadian HIV/AIDS Legal Network. Available online at: www.aidslaw.ca/publications/publicationsdocEN.php?ref=85

Canadian Tobacco Use Monitoring Survey (CTUMS). (2004). *Results from 2004*. Ottawa: Health Canada. Available online at: www.hc-sc.gc.ca/hecs-sesc/tobacco/research/ctums/

Centre for Addictions Research of BC. (2005). *Patterns of risky alcohol use in British Columbia – Results of the 2004 Canadian Addictions Survey (Bulletin 1)*. Victoria: CARBC, University of Victoria, BC.

Chaloupka, F.J. (1999). Macro-social influences: The effects of prices and tobacco control policies on the demand for tobacco products. *Nicotine and Tobacco Research*, 1(S1), S105-S109.

Chaloupka, F.J., Grossman, M., Saffer, H. (2002). The effects of price on alcohol consumption and alcohol-related problems. *Alcohol Research & Health: The Journal of the National Institute on Alcohol Abuse and Alcoholism*, 26(1), 22-34.

Chikritzhs, T., Catalano, P., Stockwell, T.R., Donath, S., Ngo, H.T., Young, D.J., and Matthews, S. (2003). *Australian Alcohol Indicators, 1990-2001: patterns of alcohol use and related harms for Australian states and territories*. National Drug Research Institute and Turning Point Alcohol and Drug Centre Inc. National Drug Research Institute, Perth, Western Australia.

Cohen, D. and Prusak, L. (2001). *In good company: How social capital makes organizations work*. Boston: Harvard Business School Press.

Coomber, R. & South, N. (Eds.). (2004). *Drug use and cultural contexts 'beyond the West': Tradition, change and post-colonialism*. London: Free Association Books.

Currie, J.C. (2003). *Manufacturing addiction: The overprescription of benzodiazepines and sleeping pills to women in Canada*. Vancouver: British Columbia Centre of Excellence for Women's Health. Available online at: www.bccewh.bc.ca/policy_briefs/Benzo_Brief/benzobriefv3.pdf

Duff, C., Scealy, M., and Rowland, B. (2004). *Executive Summary: The Culture and Context of Alcohol Use in Community Sporting Clubs in Australia: Research into 'Attitudes' and 'Behaviour'*. Deakin: Alcohol Education and Rehabilitation Foundation. Available online at: www.goodsports.com.au/research/

Dukes, R.L., Stein, J.A. & Ullman, J.B. (1997). Long-term impact of Drug Abuse Resistance Education (D.A.R.E): Results of a 6-year follow-up. *Evaluation Review*, 21(4), 483-500.

Farrell, S., Manning, W.G., Finch, M.D. (2003). Alcohol dependence and the price of alcoholic beverages. *Journal of Health Economics*, 22(1), 117-47.

FPT Advisory Committee on Population Health. (1999). *Toward a healthy future: Second report on the health of Canadians*. Ottawa: Health Canada.

Giffen, P.J., Endicott, S. & Lambert, S. (1991). *Panic and indifference: The politics of Canada's drug laws*. Ottawa: Canadian Centre on Substance Abuse.

Gmel, G., Klingemann S., Müller, R., and Brenner, D. (2001). Revising the preventive paradox: the Swiss case. *Addiction*, 96(2), 273-284.

Government of British Columbia and Children's and Women's Health Centre of British Columbia (2004). *Fetal alcohol spectrum disorder: A strategic plan for British Columbia*. Victoria: Government of British Columbia. Available online at: www.mcf.gov.bc.ca/fasd/pdf/fasd_strategic_plan-final.pdf

Grant, T., Ernst, C.C., Pagalilauan, G., Streissguth, A.P. (2003). Post-program follow-up effects of paraprofessional intervention with high-risk women who abused alcohol and drugs during pregnancy. *Journal of Community Psychology*, 31(3), 211-222.

Grant, T.M. (2005). Parent-Child Assistance Program (PCAP). April 20, 2005 from http://depts.washington.edu/fadu

Grube, J.W. and Nygaard, P. (2005). Alcohol Policy and Youth Drinking: Overview of Effective Interventions for Young People. In T. Stockwell, et al. (Eds.), *Preventing harmful substance use: The evidence base for policy and practice* (p. 113-127). Chicester: John Wiley & Sons.

Gruskin, S., Plafker, K. and Smith-Estelle, A. (2001). Understanding and Responding to Youth Substance Use: The Contribution of a Health and Human Rights Framework. *American Journal of Public Health*, 91(12), 1954-1963

Haines, B. & Graham, K. (2005). Violence prevention in licensed premises. In T. Stockwell, et al. (Eds.), *Preventing harmful substance use: The evidence base for policy and practice* (p. 163-176). Chicester: John Wiley & Sons.

Hamilton, D.L. (2004). *Sobering dilemma: A history of prohibition in British Columbia*. Vancouver: Ronsdale Press.

Health Canada. (1986). *Achieving health for all: A framework for health promotion*. Ottawa: Health Canada. Available online at: www.hc-sc.gc.ca/hcs-sss/pubs/care-soins/1986-frame-plan-promotion/index_e.html

Health Officers Council of British Columbia. (2005). A public health approach to drug control in Canada. Available online at: www.cfdp.ca/bchoac.pdf

Holder, H.D., Treno, A., and Levy, D. (2005). Community systems and ecologies of drug and alcohol problems. In T. Stockwell, et al. (Eds.), *Preventing harmful substance use: The evidence base for policy and practice* (p. 149-161). Chicester: John Wiley & Sons.

Homel, R., Hauritz, M., McIlwain, G., Wortley, R. & Carvolth, R. (1997). Preventing alcohol-related crime through community action: The Surfers Paradise Safety Action Project. In R. Homel (Ed.), *Policing for prevention: Reducing crime, public intoxication and injury* (p. 35-90). Crime Prevention Studies, Volume 7. New York: Willow Tree Press.

Homel, R., Tomsen, S. (1993). Hot spots for violence: The environment of pubs and clubs. In H. Strang & S. Gerull (Eds.), *Homicide: Patterns, prevention and control* (p. 53-66). Canberra, Australian Institute of Criminology.

Kuo, M., Wechsler, H., Greenberg, P., Lee, H. (2003). The marketing of alcohol to college students: The role of low prices and special promotions. *American Journal of Preventive Medicine*, 25(3), 204-211.

Lang, E., Stockwell, T.R., & White, M. (1995). The acceptability of reforms of liquor licensing laws to the general public and to key stakeholders. In T. Stockwell (Ed.), *An examination of the appropriateness and efficacy of liquor licensing laws across Australia* (p. 271-286). Canberra, ACT: Department Human Services and Health, Australian Government Publishing Service.

Lavis J.N., Robertson, D., Woodside, J.M., McLeod, C.B., Abelson J., & the Knowledge Transfer Study Group. (2003). How can research organizations more effectively transfer research knowledge to decision-makers? *The Milbank Quarterly*, 81(2), 221-248.

Lincoln, R. and Homel, R. (2001). Alcohol and youthful rites of passage. In P. Williams (Ed.), *Alcohol, young persons and violence* (p. 47-59). Canberra: Australian Institute of Criminology.

Loxley, W., Stockwell, T.R., Gray, D., Midford, R., Lenton, S., Mcbride, N. & Carruthers, S.J. (2000, July). Submission to House of Representatives, Standing Committee on Family and Community Affairs: Current Inquiry: Substance Use in Australian Communities.

Loxley, W., et al. (2004). *The prevention of substance use, risk and harm in Australia: A review of the evidence*. Canberra, Australia: The National Drug Research Institute and the Centre for Adolescent Health.

Lyman, D.R., et al. (1999). Project DARE: No effects at 10-Year follow-up. *Journal of Consulting and Clinical Psychology*, 67(4), 590-593.

McBride, N. (2005). The Evidence Base for School Drug Education Interventions. In T. Stockwell, et al. (Eds.), *Preventing Harmful Substance Use: The evidence base for policy and practice* (p 101-112). Chicester: John Wiley & Sons.

McBride, N., Farringdon, F., Midford, R., Meuleners, L., and Phillips, M. (2004). Harm minimization in school drug education: final results of the School Health and Alcohol Harm Reduction Project (SHAHRP). *Addiction*, 99(3), 278-291.

Marmot, M. (1999). Introduction. In M. Marmot and R. Wilkinson (Eds.), *Social determinants of health* (p. 1-16). New York: Oxford University Press.

Movig, K.L.L., Mathijssen, M.P.M., Nagel, P.H.A., van Egmond, T., de Gier, J.J., Leufkens, H.G.M., and Egberts, A.C.G. (2004). Psychoactive substance use and the risk of motor vehicle accidents. *Accident Analysis and Prevention*, 36, 631-636.

Mrazek, P.J. and Haggerty, R.J. (Eds.). (1994). *Reducing risks for mental disorders: Frontiers for preventive intervention research*. Institute of Medicine. Committee on Prevention of Mental Disorders. Washington, DC: National Academy Press.

Office of the BC Provincial Health Officer (2001). *Provincial health officer's annual report 2001: The health and well-being of aboriginal people in British Columbia*. Victoria: BC Ministry of Health Planning. Available online at: www.healthservices.gov.bc.ca/pho/pdf/phoannual2001.pdf

Poole, N. (2000). *Evaluation report of the Sheway Project for high risk pregnant and parenting women*. Vancouver, BC: British Columbia Centre of Excellence for Women's Health.

Poulin, C. (2001). Medical and nonmedical stimulant use among adolescents: From sanctioned to unsanctioned use. *Canadian Medical Association Journal*, 165(8), 1039-1044.

Project on Adolescent Trajectories and Health—Okanagan University College. (2005). Available online at: http://web.ubc.ca/okanagan/psycomp/faculty/mkrank/research/path/info.html

Putnam, R. (2000). *Bowling Alone: The collapse and revival of American community*. New York: Simon and Schuster.

Rehm, J. and Room, R. (2005). The global burden of disease attributable to alcohol, tobacco and illicit drugs. In T. Stockwell, et al. (Eds.), *Preventing harmful substance use: The evidence base for policy and practice* (p. 25-41). Chicester: John Wiley & Sons.

Ringwalt, C.L., et al. (2003). Factors associated with fidelity to substance use prevention curriculum guides in the nation's middle schools. *Health Education & Behavior*, 30(3), 375-391.

Roberts, G. & Nanson, J. (2001). *Best practices: Fetal alcohol syndrome/fetal alcohol effects and the effects of other substance use during pregnancy*. Ottawa: Health Canada.

Room, R., Graves, K., Giesbrecht, N., and Greenfield, T. (1995). Trends in public opinion about alcohol policy initiatives in Ontario and the US 1989-91. *Drug and Alcohol Review*, 14, 35-47.

Room, R. (2000). Preventing alcohol problems: Popular approaches are ineffective, effective approaches are politically impossible. Stockholm: Centre for Social Research on Alcohol and Drugs. Available online at: www.sisanet/prevent.htm

Room, R., Graham, K., Rehm, J., Jernigan, D. & Monteiro, M. (2003). Drinking and its burden in a global perspective: Policy considerations and options. *European Addiction Research*, 9, 165-175.

Room, R., Babor, T. & Rehm, J. (2005). Alcohol and public health. *The Lancet*. 365, 519-530.

Saltz, R.F. (2005). What is "Evidence", and Can We Provide It? In T. Stockwell et al. (Eds.), *Preventing harmful substance use: The evidence base for policy and practice* (p. 313-323). Chicester: John Wiley & Sons.

Sanchez-Craig, M. (1996). *A therapist's manual: Secondary prevention of alcohol problems*. Toronto, ON: Centre for Addiction and Mental Health.

Shewan, D. & Dalgarno, P. (2005). Low levels of negative health and social outcomes among non-treatment heroin users in Glasgow (Scotland): Evidence for controlled heroin use? *British Journal of Health Psychology*. 10, 1–17.

Smye, V. and Mussell, B. (2001). *Aboriginal mental health: What works best*. Vancouver: Mental Health Evaluation & Community Consultation Unit, University of BC. Available online at:
www.fnhealth.ubc.ca/documents/publications/discussion-paper.pdf

Stockwell, T., Masters, L., Phillips, M., Daly, A., Midford, R., Gahegan, M. & Philp, A. (1998). Consumption of different alcoholic beverages as predictors of local rates of assault, road crash and hospital admission. *Australian and New Zealand Journal of Public Health*. 22(2), 237-242.

Stockwell, T. (2001). Responsible alcohol service: Lessons from evaluations of server training and policing initiatives. *Drug and Alcohol Review*. 20(3), 257-265.

Stockwell, T., Chikritzhs, T., Hendrie, D., Fordham, R., Ying, F., Phillips, M., Cronin, J. & O'Reilly, B. (2001). The public health and safety benefits of the Northern Territory's Living with Alcohol programme. *Drug and Alcohol Review*. 20(2), 167-180.

Stockwell, T.R. and Crosbie, D. (2001). Supply and demand for alcohol in Australia: relationships between industry structures, regulation and the marketplace. *International Journal of Drug Policy*. 12(2), 139-152.

Stockwell, T., Gruenewald, P.J., Toumbourou, J.W., & Loxley, W. (Eds.). (2005). *Preventing harmful substance use: The evidence base for policy and practice*. Chicester: John Wiley & Sons.

Stockwell, T., Gruenewald, P.J., Toumbourou, J.W., and Loxley, W. (2005). Preventing risky drug use and related harms: The need for a synthesis of new knowledge. In T. Stockwell, et al., *Preventing harmful substance use: The evidence base for policy and practice* (p. 3-16). Chicester: John Wiley & Sons.

Stockwell, T.R., Toumbourou, J., Letcher, P., Smart, D., Sanson, A., & Bond, L. (2004). Risk and protection factors for different intensities of adolescent substance use: When does the prevention paradox apply? *Drug and Alcohol Review*. 23(1), 67-77.

The McCreary Centre Society. (1993). *Adolescent Health Survey: Province of British Columbia*. Burnaby: The McCreary Centre Society.

The McCreary Centre Society. (1999). *Adolescent Health Survey II: Fact Sheets*. Burnaby: The McCreary Centre Society.

The McCreary Centre Society. (2004). *Health Youth Development: Highlights from the 2003 Adolescent Health Survey III*. Vancouver: The McCreary Centre Society.

Therapeutics Initiative. (2004, November-December). *Therapeutics Letter*, 54. Therapeutics Initiative—University of British Columbia. Available online at: www.ti.ubc.ca/PDF/54.pdf

Tobler N. 1992. Drug prevention programs can work: research findings. *Journal of Addictive Diseases*. 11(3). 1-28.

Toumbourou, J.W. and Catalano, R. (2005). Predicting developmentally harmful substance use. In T. Stockwell, et al., (Eds.), Preventing harmful substance use: The evidence base for policy and practice (pp. 53-66). Chicester: John Wiley & Sons.

Toumbourou, J.W., Williams, J., Patton, G., and Waters, E. (2005). What do we know about preventing drug-related harm through social developmental intervention with children and young people? In T. Stockwell, et al., *Preventing harmful substance use: The evidence base for policy and practice* (pp. 87-100). Chicester: John Wiley & Sons.

Transport Canada. (2004). *Canadian motor vehicle traffic collision statistics*. Ottawa: Transport Canada. Available online at: www.ccmta.ca/english/pdf/collision_stats_03_e.pdf

UNODC—United Nations Office on Drugs and Crime. (2005). *World Drug Report 2005*. Vienna: United Nations Office on Drugs and Crime. Available online at: www.unodc.org/unodc/world_drug_report.html

U.S. Department of Health and Human Services. (2000). *Reducing tobacco use: A report of the surgeon general*. Atlanta, GA: U.S. Department of Health and Human Services.

Vaughan, S. (2001). Reducing alcohol-related harm in and around licensed premises: Industry accords - a successful intervention. In P. Williams (Ed.), *Alcohol, young persons and violence* (203-216). Canberra: Australian Institute of Criminology.

Wagenaar, A.C., Harwood, E.M., Toomey, T.L., Denk, C.E., & Zander, K.M. (2000). Public opinion on alcohol policies in the United States: Results from a national survey. *Journal of Public Health Policy*. 21(3). 303-327.

Wakefield, M.A., Chaloupka, F.J., et al. (2000). Effect of restrictions on smoking at home, at school, and in public places on teenage smoking: Cross sectional study. *British Medical Journal*. 321. 333-337.

The World Bank (1999) What is Social Capital? Poverty Net. Available online at: http://www1.worldbank.org/prem/poverty/scapital/whatsc.htm (accessed June 4, 2005).

World Health Organization. (2000). *International guide for monitoring alcohol consumption and alcohol related harm*. Geneva: World Health Organization. WHO/MSD/MSB/00.5

World Health Organization. (2003). *Harm reduction approaches*. Geneva: World Health Organization. Available online at: www.who.int/hiv/topics/harm/reduction/en/

World Health Organization. (2004). *Promoting mental health: Concepts-emerging evidence-practice: Summary Report*. Geneva: World Health Organization. Available online at: www.who.int/mental_health/evidence/en/promoting_mhh.pdf

Zador, P., Lund, A., Fields, M. & Weinberg, K. (1989). Fatal crash involvement and laws against alcohol-impaired driving. *Journal of Public Health Policy*. 10. 467-485.

Zinberg, N. E. (1984). *Drug, set, and setting: The basis for controlled intoxicant use*. New Haven, CT: Yale University Press.

BRITISH COLUMBIA
The Best Place on Earth

Ministry of Health

QP# 4500149586